User Manual

Standard HMI Touch Panels

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Safety Information

Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Safety Precautions

- Please read these safety instructions carefully.
- Please keep this user's manual for later reference.
- Please disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
- For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
- Keep this equipment away from humidity.
- Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- The openings on the enclosure are for air convection and to protect the equipment from overheating. DO NOT COVER THE OPENINGS.
- Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- All cautions and warnings on the equipment should be noted.
- If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
- Never pour any liquid into an opening. This could cause fire or electrical shock.
- Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
- If any of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well or you cannot get it to work according to the user’s manual.
  - The equipment has been dropped and damaged.

- The equipment has obvious signs of breakage.
- Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4°F) or above 60° C (140° F). It may damage the equipment.
- **CAUTION** – Use the recommended mounting apparatus to avoid risk of injury.
- **WARNING** – Only use the connection cords that come with the product. When in doubt, please contact the manufacturer.
- **WARNING** – Ground against electrostatic damage to the device by taking the following preventive steps:
  - Cover workstations with approved anti-static material. Use a wrist strap connected to a work surface and properly grounded tools and equipment.
  - Use anti-static mats, heel straps, or air ionizer for added protection.
  - Handle electrostatic-sensitive components, PCB's and assemblies by the case or the edge of the board.
  - Avoid contact with pins, leads, or circuitry.
  - Turn off power and input signals before inserting and removing connectors or test equipment.
  - Keep the work area free of non-conductive materials, such as ordinary plastic assembly aids and Styrofoam.
  - Use filed service tools, such as cutters, screwdrivers, and vacuum cleaners that are conductive.
  - Always lay drivers and PCB's with the component side down on anti-static foam.

Intended Use

Premium HMI Touch Panels are primarily intended for use in HMI, SCADA & MES applications. They are suitable for use in industrial environments and are typically used for automation purposes.

Important Information

Federal Communications Commission Radio Frequency Interface Statement – For USA

This device complies with part 15 FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "A" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at him own expense.

Certifications and Standards

Agency Standard for Marking	Description
UL/cUL/CB 61010	Safety of electrical equipment; measurement, control, industrial process, and laboratory electrical equipment.
UL/cUL/CB 62368	Safety of electronic equipment; audio, video, information and communication technology, and business and office machines.

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Warranty
Our warranty guarantees that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, we will, at his/her option, repair or replace the defective product at no charge to the customer, provide it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service.
If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year

of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W14Axxxxxxxx means October of year 2014.

Customer Service

We provide a service guide for any problem by the following steps: First, visit the website of our distributor to find the update information about the product. Second, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may need the following information ready before you call:

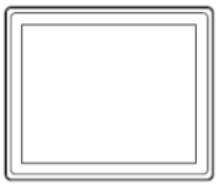
- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- The exact wording of any error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

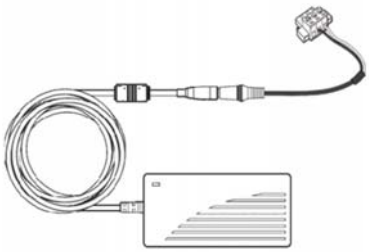
Physical Overview

Package Contents

Before using this Panel PC, please make sure that all the items listed below are present in your package:



Panel PC



AC adapter

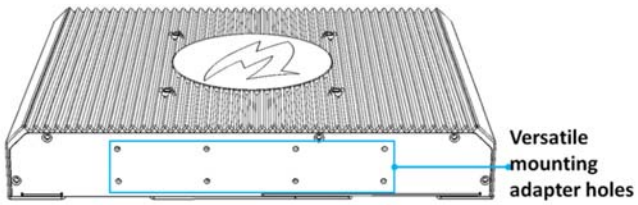
2 x Power Cord (EU and USA type)

Engineering display stand

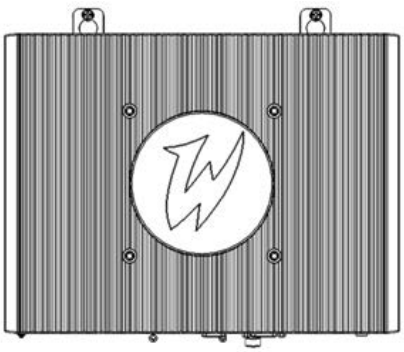
Mounting Fasteners

Box PC Description

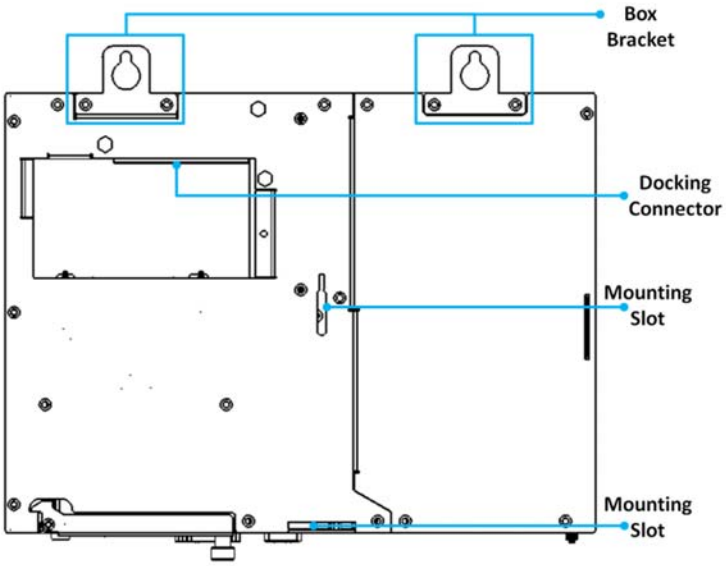
Box PC Front View



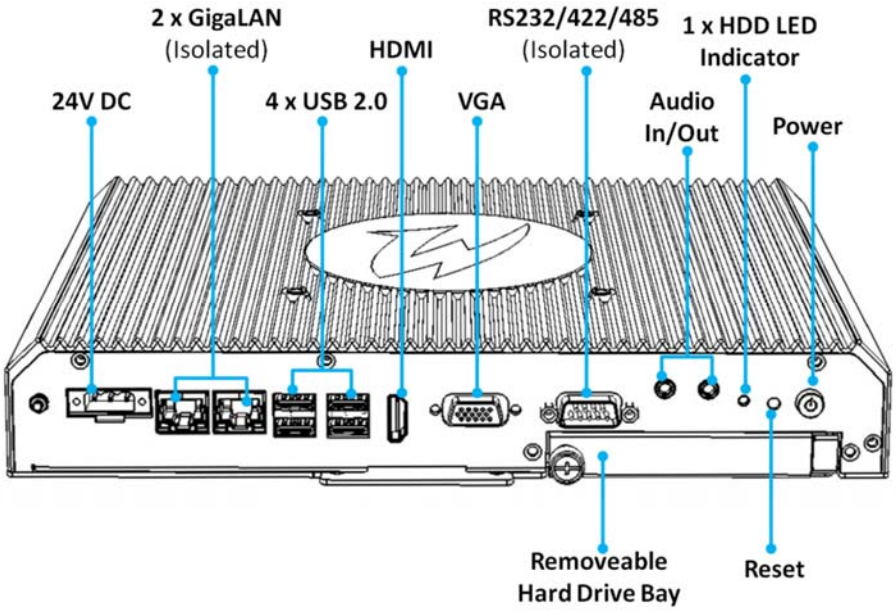
Box PC Top View



Box PC Bottom View

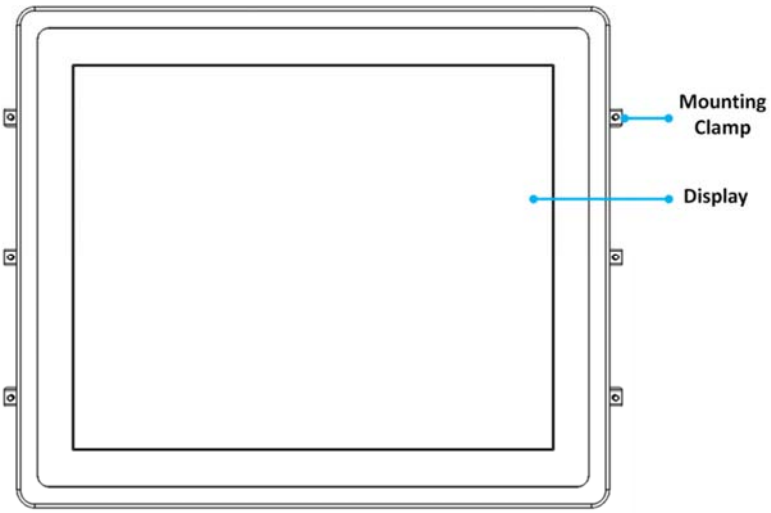


Box PC I/O View

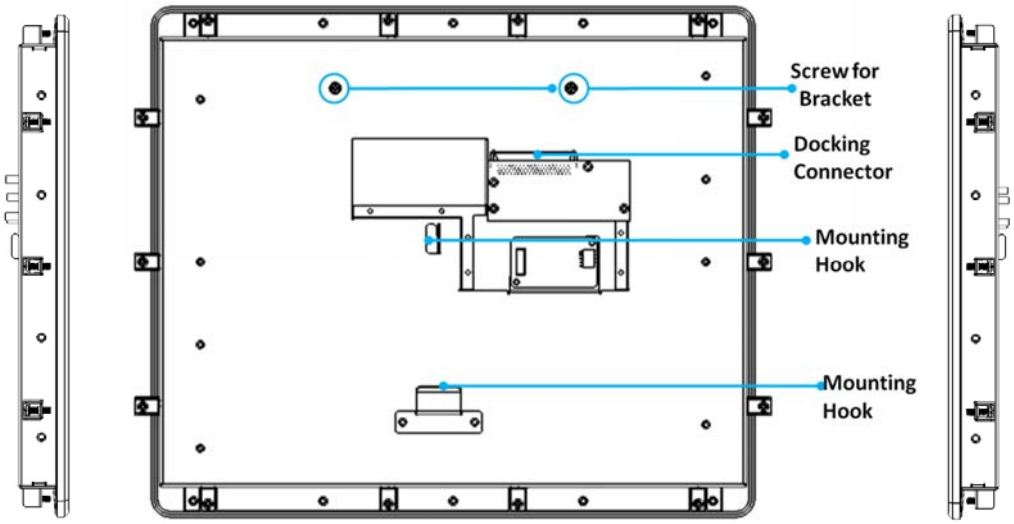


Display Description

Display Front View



Display Side and Rear Views



Characteristics

Panel PC Characteristics (4:3)

	Part Number		
	HMI-TSND0U-12SR-X00H	**HMI-TSND0U-15SR-X00H**	**HMI-TSND0U-17SR-X00H**
Display			
Size in inches / resolution in pixels	12.1" / XGA, 1024 x 768	15" / XGA, 1024 x 768	17" / SXGA, 1280 x 1024
Brightness / luminance	500 nits / 500 cd/m²	400 nits / 400 cd/m²	350 nits / 350 cd/m²
MTBF of backlight	LED-backlight up to 100,000 hours in Eco mode		
Touchscreen	Single-touch (resistive analog)		
System Hardware			
Processor	Intel® Atom™ E3845 Processor; 2M Cache, 1.91 GHz, 10 W maximum TDP		
Cores / speed	4 / 1.91 GHz		
Memory / # of slots	From 4 GB DDR3L 1333 SDRAM, configurable up to 8 GB / 2 slots		
Graphics / video	Intel HD graphics; DirectX 11.1, OpenCL / GL, and 4K videos Quick Sync encoder		
Drives			
Mass storage	1 x 180 GB SSD		
Secondary storage	32 GB m-SATA SSD		
Optical drives	Connection via USB port		
Interface Ports			
Ethernet	2 x Ethernet TCP/IP - RJ45, isolated		
USB	4 x USB 2.0		
Serial	COM1: RS-232/422/485, isolated		
Graphics / video	1 x VGA; 1 x HDMI		
Audio	1 x Line-in, 1 x Line-out		
General Features			
Operating system	Windows Embedded 7 32 or 64-bit / Windows Embedded 8		
Current supply	24 V DC; 9.6 to 28.8 V, isolated		
Bezel / housing	Stainless steel / aluminum		
Mounting options	Panel PC: Panel / wall mount; Box PC: Wall / DIN rail mount		
Packages / bundles	Packages with Wonderware InTouch, ready-to-use HMI software (optional)		
Environmental / Ambient Conditions			
Degree of protection / thermal	Front: IP66; Rear: IP20 / Fanless		
Electromagnetic compatibility	CE, FCC A, EN 61000-6-4, EN 61000-6-3, CISPR22, RoHS		
Vibration during operation	Tested according to DIN IEC 60068-2-64: 5 - 500 Hz: 1 Grms		
Shock during operation	Tested according to DIN IEC 60068-2-27: 15 gn for 11 ms		
Ambient temperature	0...50˚C (32...122˚F)		
Relative humidity	30% to 95% at 40°C (no condensation)		
Certifications / regulations	UL/cUL/CB 62368, UL/cUL/CB 61010, IP66, NEMA 4/4X		
	Physical Specifications		
Operator panel / cut-out (W x H)	297 x 236 mm	387 x 291 mm	408 x 313 mm
Installation dimensions (W x H x D)	313.5 x 246 x 79.6 mm	397 x 311.5 x 79.6 mm	418 x 353.7 x 79.6 mm

Product weight (kg / lb)	7.8 / 17.1	8.9 / 19.6	9.8 / 21.7
Warranty			
Period	12 months		

Panel PC Characteristics (16:9)

	Part Number		
	HMI-TSND0U-15SC-X00H	**HMI-TSND0U-18SC-X00H**	**HMI-TSND0U-22SR-X00H**
Display			
Size in inches / resolution in pixels	15.6" / FWXGA, 1366 x 768	18.5" / FWXGA, 1366 x 768	21.5" / HD, 1920 x 1080
Brightness / luminance	400 nits / 400 cd/m²	250 nits / 250 cd/m²	250 nits / 250 cd/m²
MTBF of backlight	LED-backlight up to 100,000 hours in Eco mode		
Touchscreen	Multi-touch (projected capacitive)		Single-touch (resistive analog) / Multi-touch (projected capacitive) optional
System Hardware			
Processor	Intel® Atom™ E3845 Processor; 2M Cache, 1.91 GHz, 10 W maximum TDP		
Cores / speed	4 / 1.91 GHz		
Memory / # of slots	From 4 GB DDR3L 1333 SDRAM, configurable up to 8 GB / 2 slots		
Graphics / video	Intel HD graphics; DirectX 11.1, OpenCL / GL, and 4K videos Quick Sync encoder		
Drives			
Mass storage	1 x 180 GB SSD		
Secondary storage	32 GB m-SATA SSD		
Optical drives	Connection via USB port		
Interface Ports			
Ethernet	2 x Ethernet TCP/IP - RJ45, isolated		
USB	4 x USB 2.0		
Serial	COM1: RS-232/422/485, isolated		
Graphics / video	1 x VGA; 1 x HDMI		
Audio	1 x Line-in, 1 x Line-out		
General Features			
Operating system	Windows Embedded 7 32 or 64-bit / Windows Embedded 8		
Current supply	24 V DC; 9.6 to 28.8 V, isolated		
Bezel / housing	Stainless steel / aluminum		
Mounting options	Panel PC: Panel / wall mount; Box PC: Wall / DIN rail mount		
Packages / bundles	Packages with Wonderware InTouch, ready-to-use HMI software (optional)		
Environmental / Ambient Conditions			
Degree of protection / thermal	Front: IP66; Rear: IP20 / Fanless		
Electromagnetic compatibility	CE, FCC A, EN 61000-6-4, EN 61000-6-3, CISPR22, RoHS		
Vibration during operation	Tested according to DIN IEC 60068-2-64: 5 - 500 Hz: 1 Grms		
Shock during operation	Tested according to DIN IEC 60068-2-27: 15 gn for 11 ms		

Ambient temperature	0...50˚C (32...122˚F)		
Relative humidity	30% to 95% at 40°C (no condensation)		
Certifications / regulations	UL/cUL/CB 62368, UL/cUL/CB 61010, IP66, NEMA 4/4X		
Physical Specifications			
Operator panel / cut-out (W x H)	412.4 x 261.7 mm	479.3 x 300.3 mm	534 x 331 mm
Installation dimensions (W x H x D)	446 x 276.5 x 79.6 mm	495 x 316 x 79.6 mm	552.6 x 343.8 x 79.6 mm
Product weight (kg / lb)	9.3 / 20.4	10.5 / 23.1	11.7 / 25.8
Warranty			
Period	12 months		

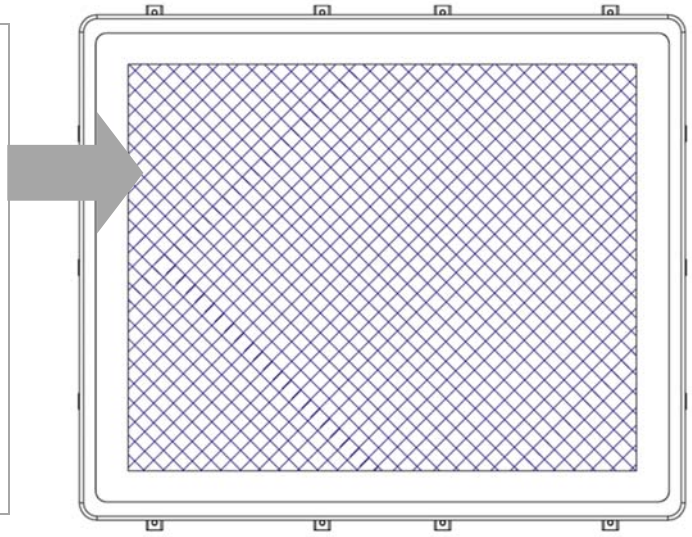
Environmental Characteristics

Chemical Resistance for Resistive Touch

The active area of the touch screen is resistant to the following chemicals when exposed for a period of one hour at a temperature of 70°F (21°C):

Industrial Chemical

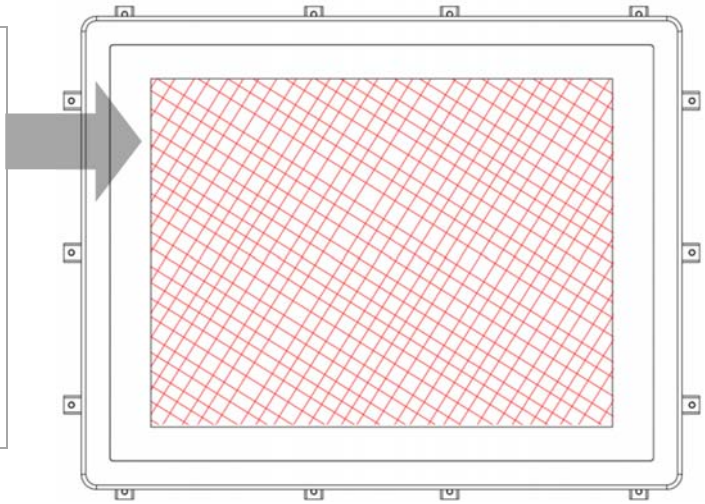
- Acetone
- Methylene chloride
- Methyl ethyl ketone
- Isopropyl alcohol
- Hexane
- Turpentine
- Mineral spirits
- Unleaded Gasoline
- Diesel Fuel
- Motor Oil
- Transmission Fluid
- Antifreeze



Chemical Resistance for Projected Capacitive touch

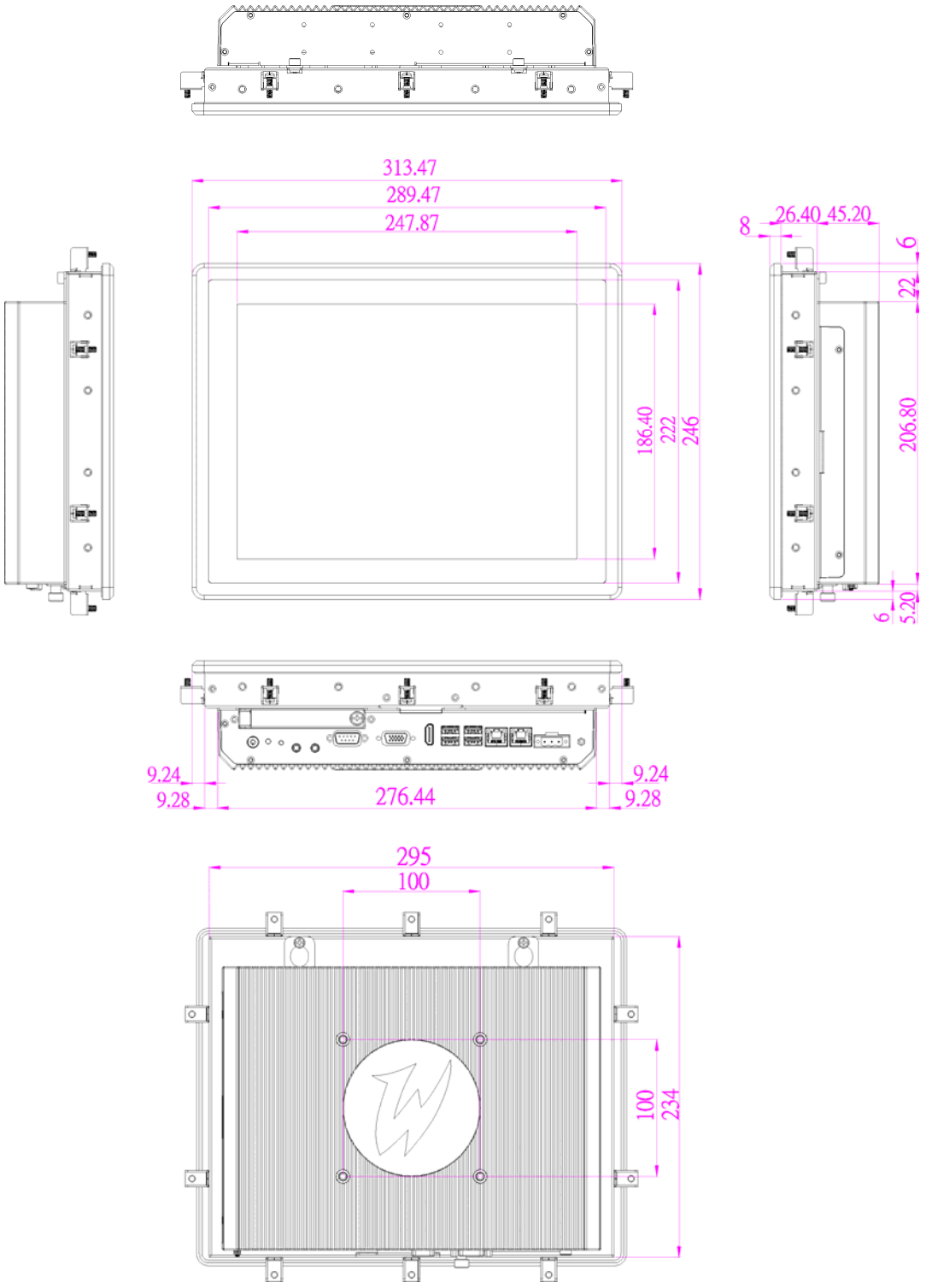
The surface area of the P-Cap touch screen is resistant to all chemicals that do not affect glass such as:

- Acetone
- Toluene
- Methyl ethyl ketone
- Isopropyl alcohol
- Methyl alcohol
- Ethyl acetate
- Ammonia based glass cleaners
- Gasoline
- Kerosene
- Vinegar

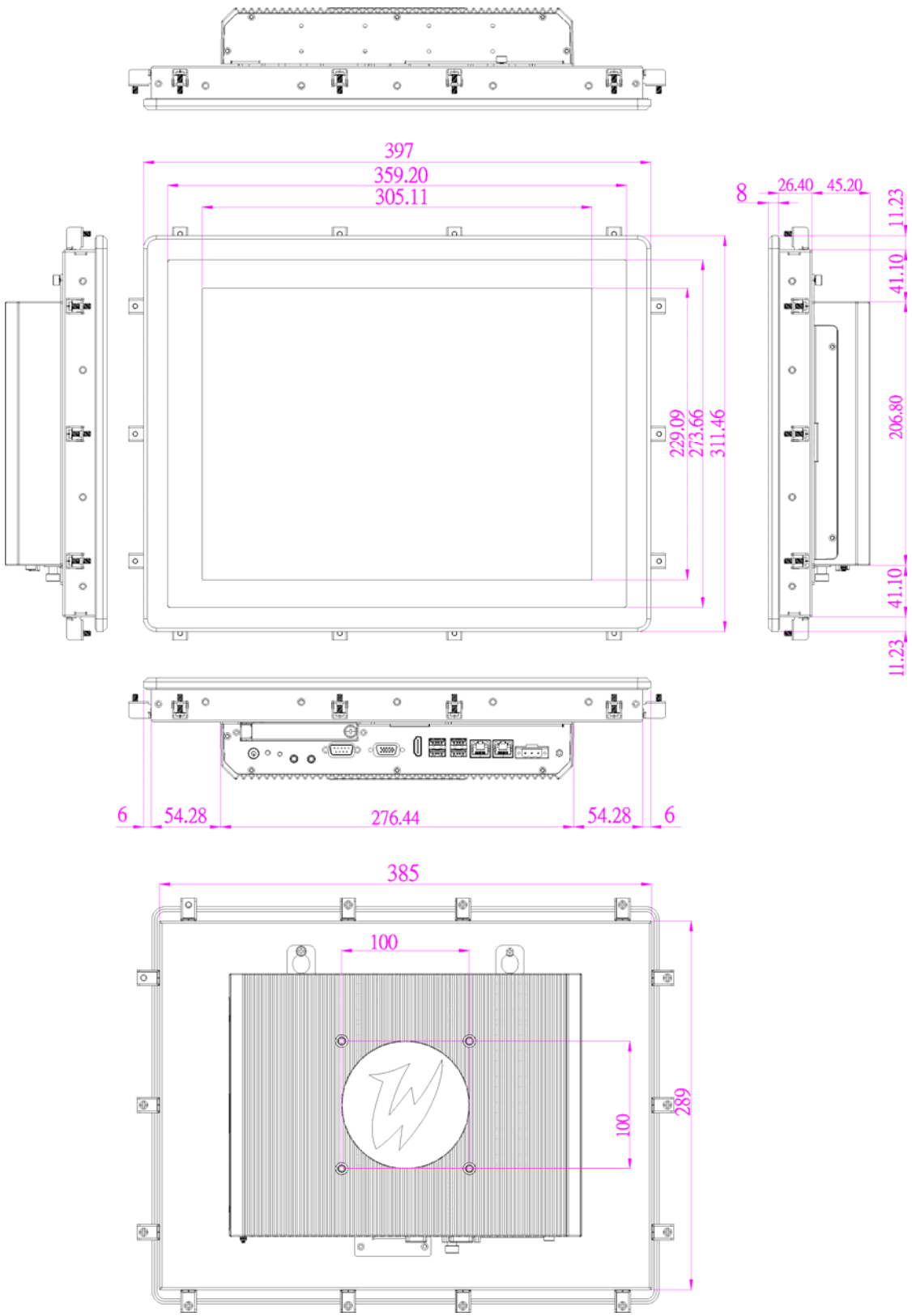


Mechanical Dimensions

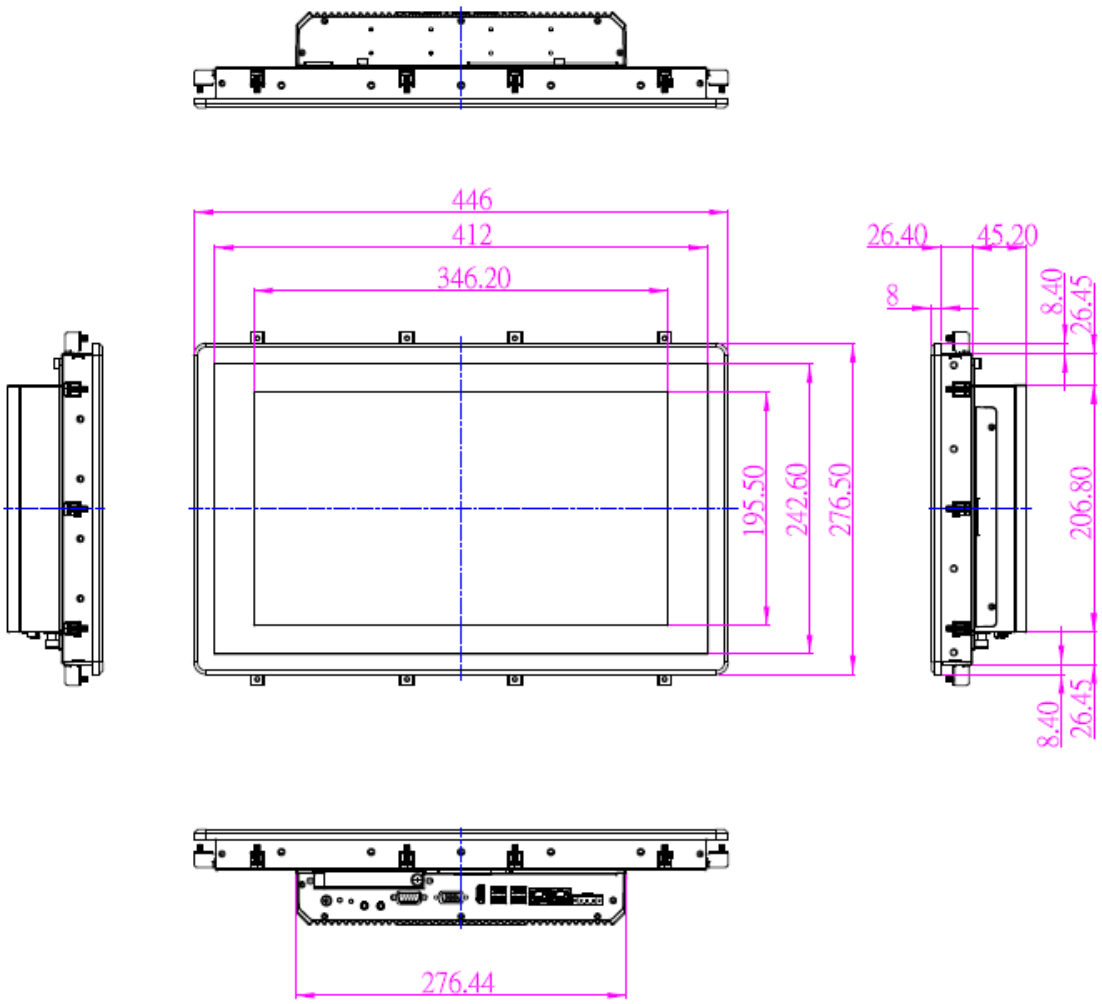
12.1” Dimensions



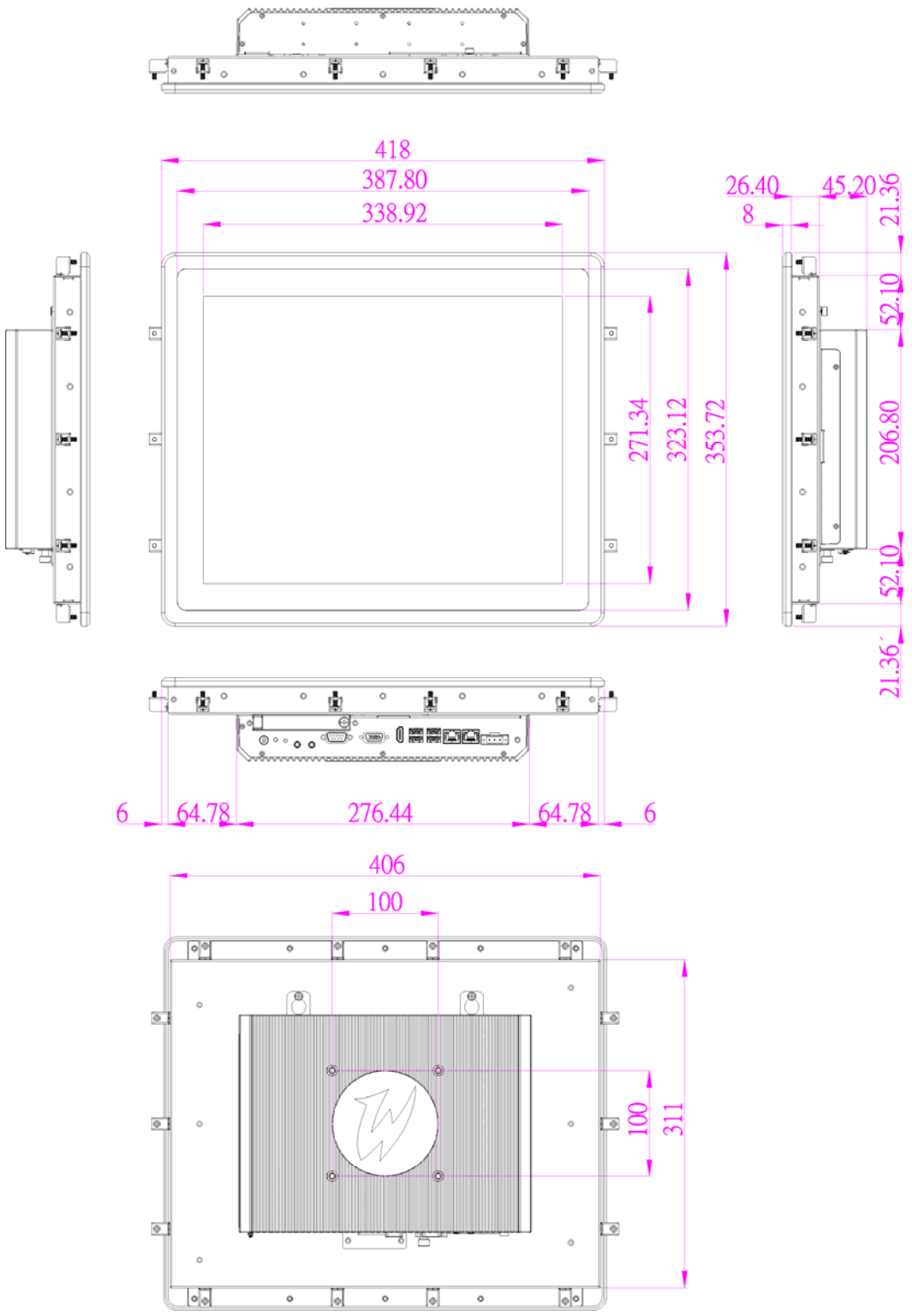
15” Dimensions



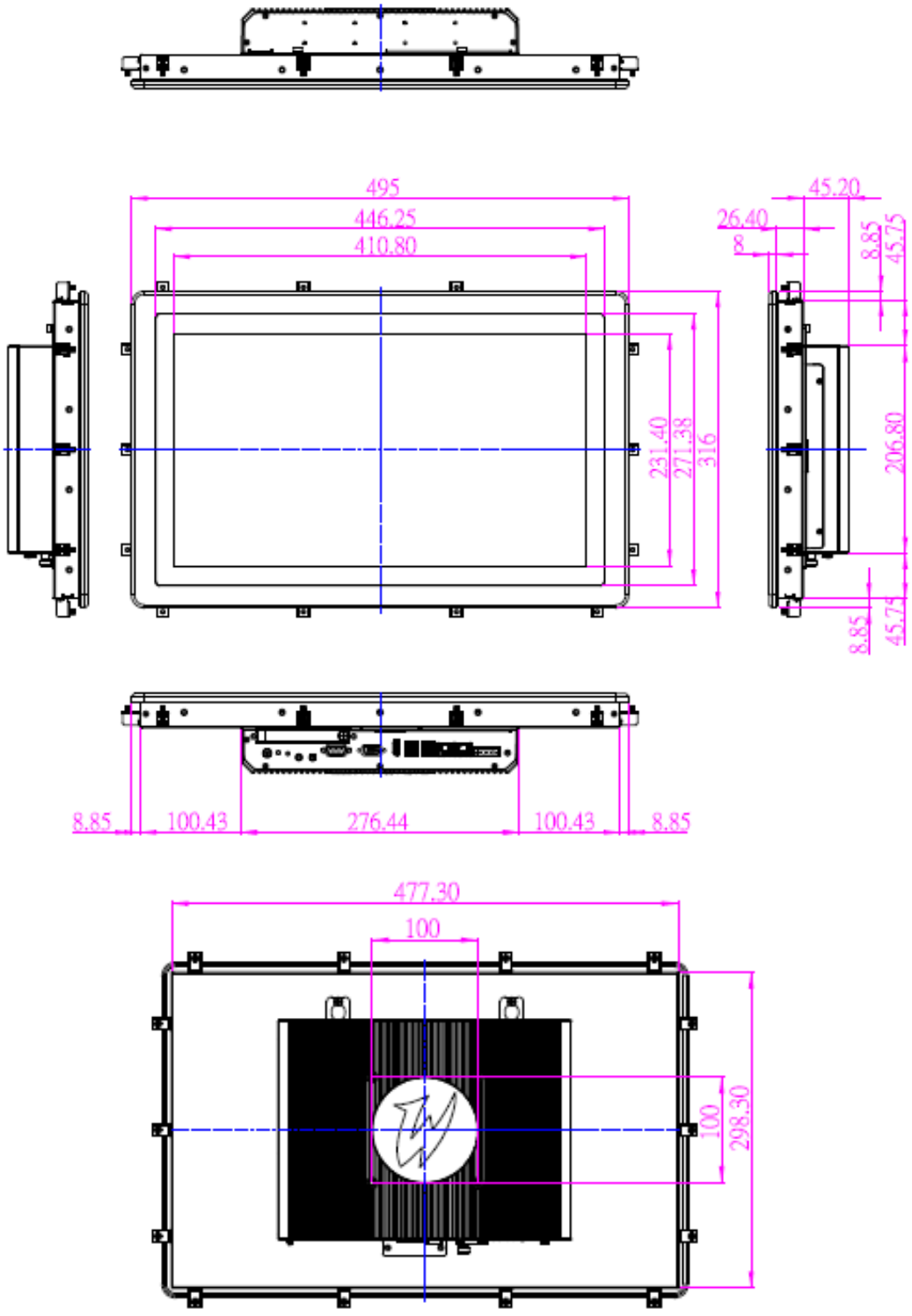
15.6” Dimensions



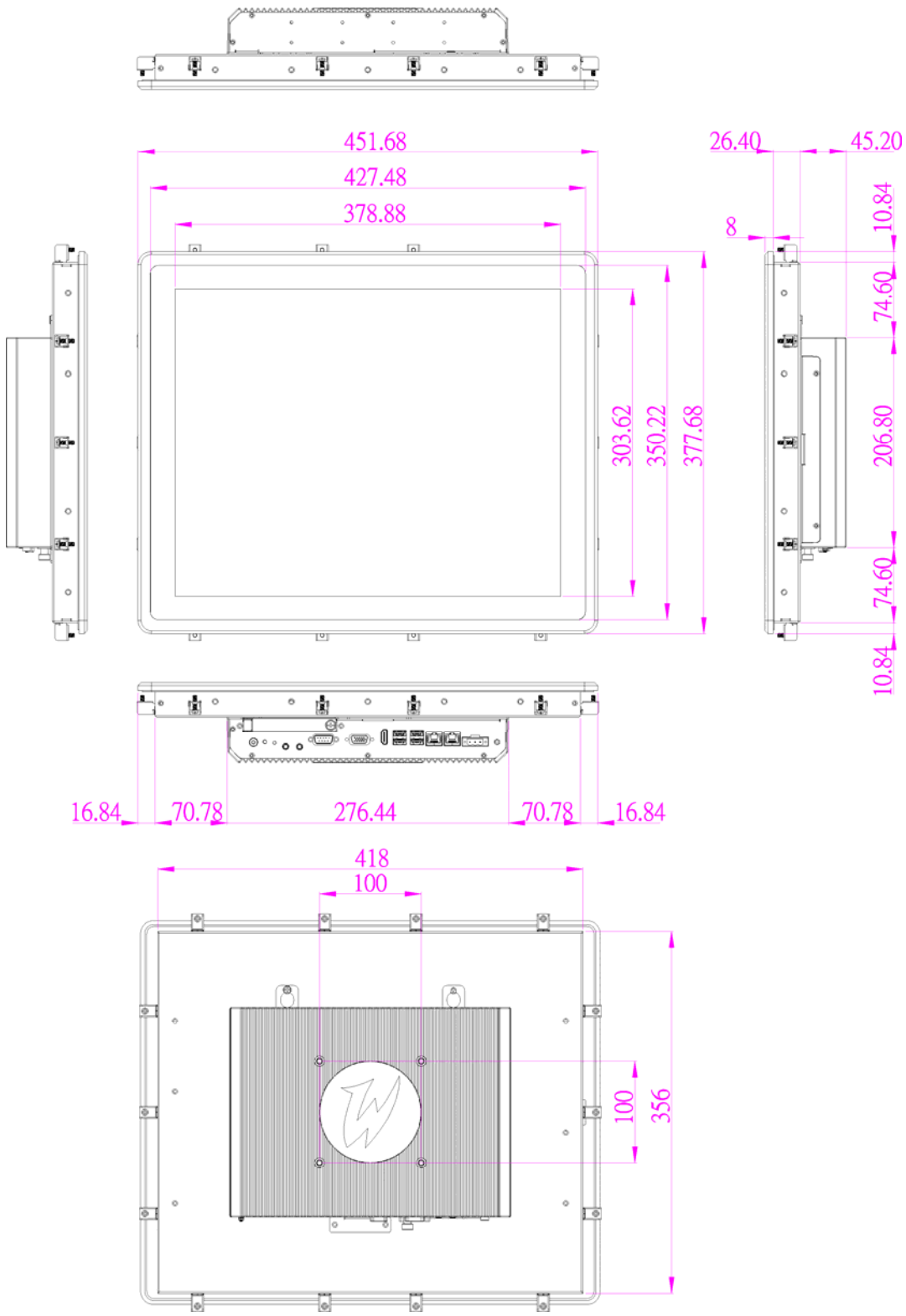
17” Dimensions



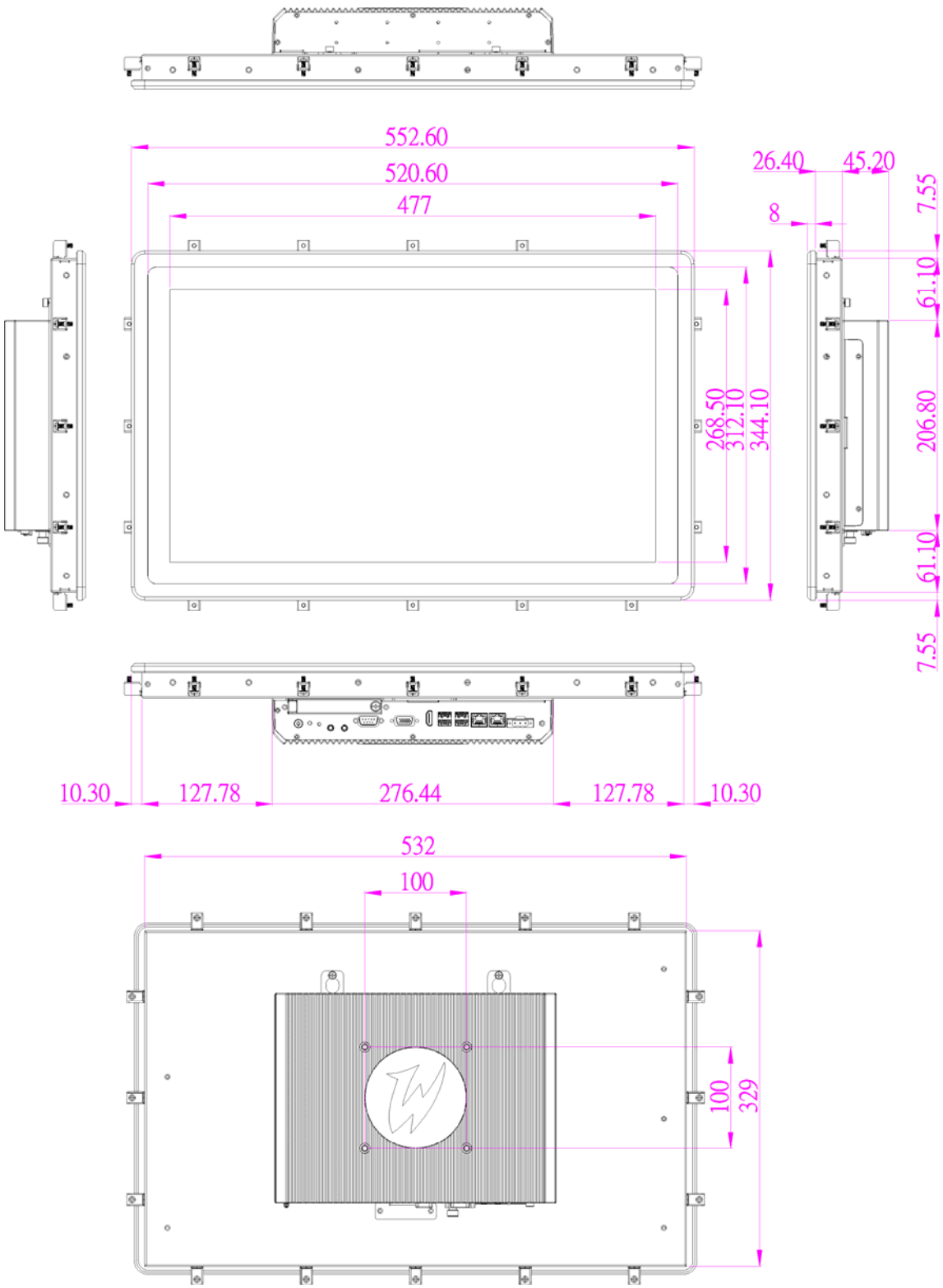
18.5” Dimensions



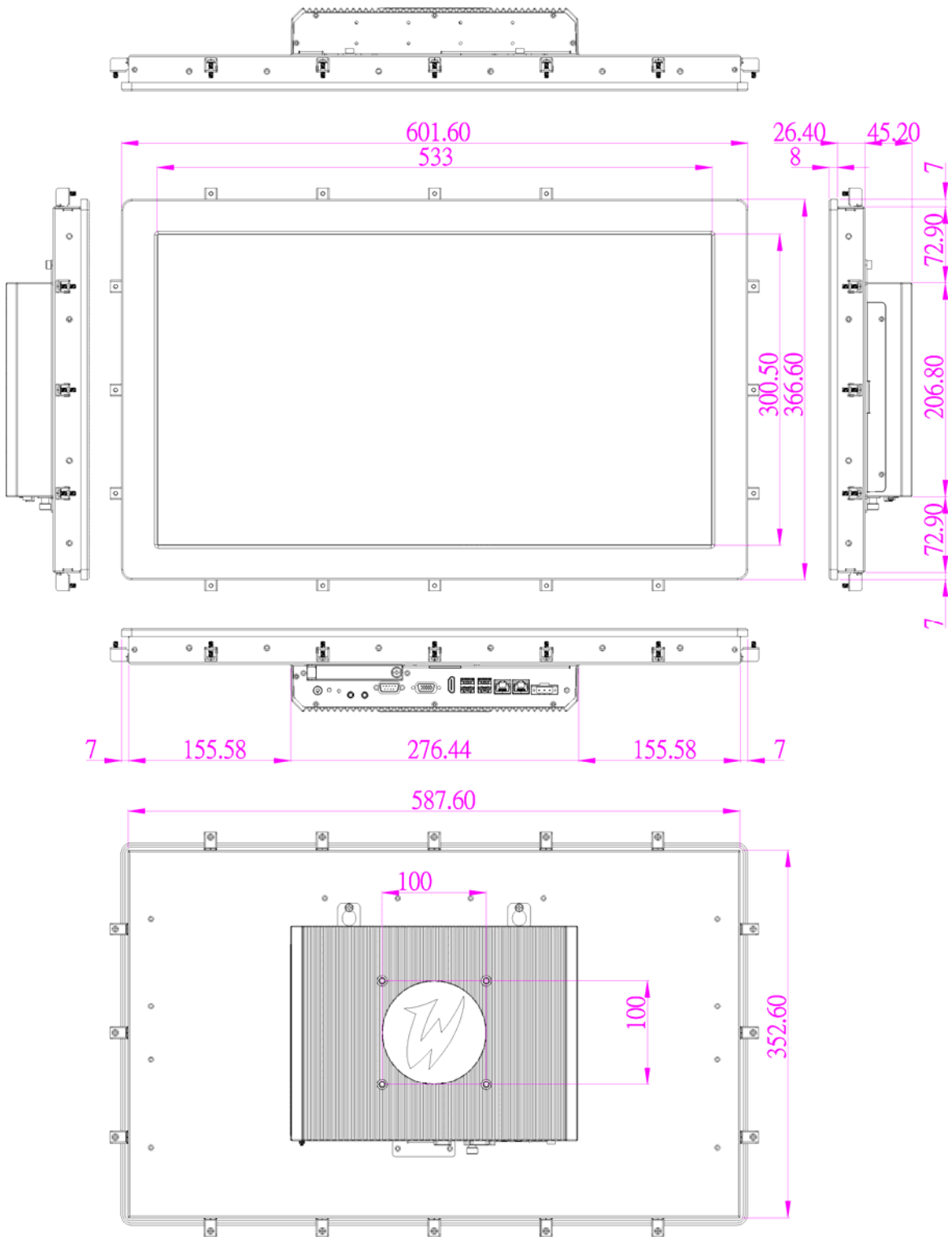
19” Dimensions



21.5” Dimensions



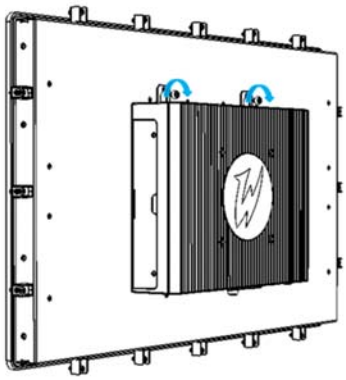
24” Dimensions



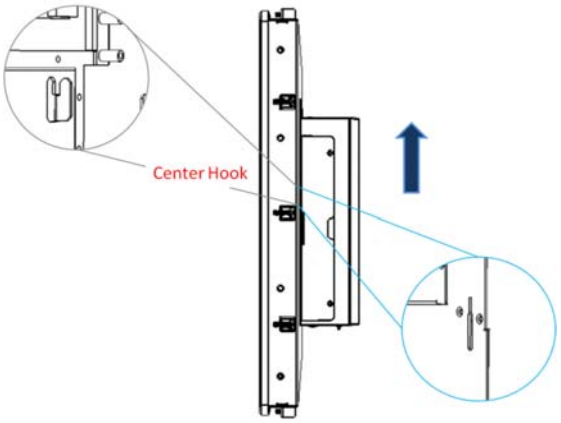
Detach Display Application

This section will guide user how to detach and attach the Box PC for easy transport, to detach the Box PC from the display unit:

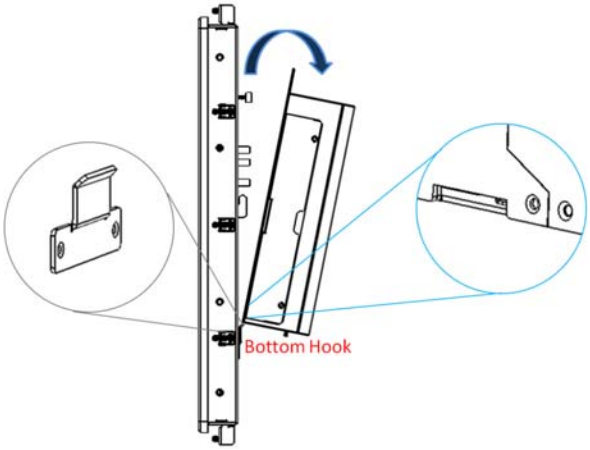
1. Turn off the device and disconnect the power source and peripherals.
2. Carefully lay the device with the display facing down on a stable and ESD safe surface.
3. Loosen the two screws on the box bracket securing from Box PC to the display unit.



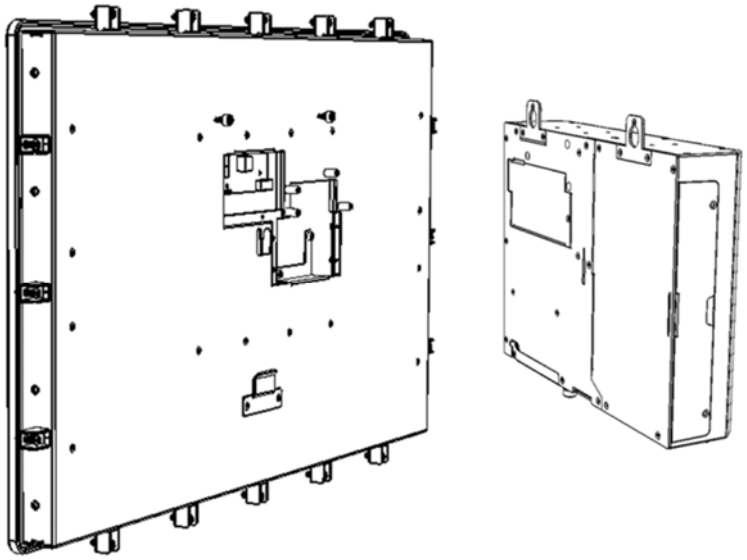
4. Push the Box PC upward to disengage the Box PC from it is connector and the hook on the display unit.



5. Carefully separate the Box PC from the second hook located at the bottom of the display.



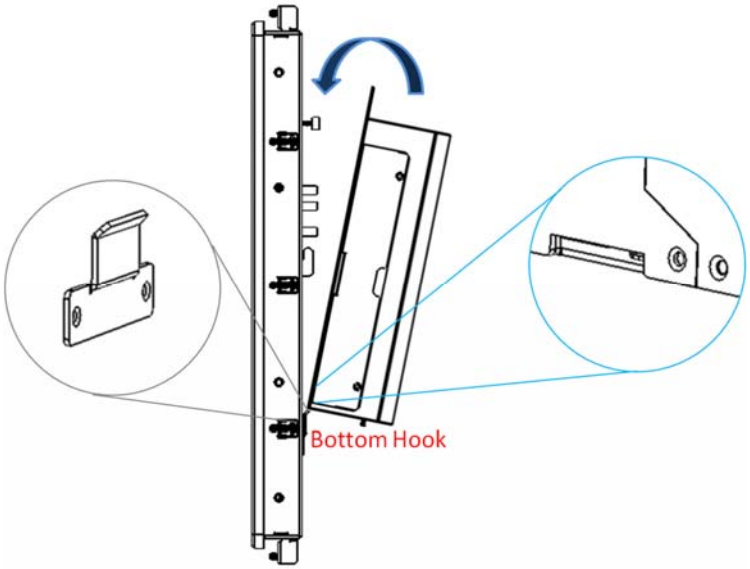
6. Box PC and Display unit are completely detached.



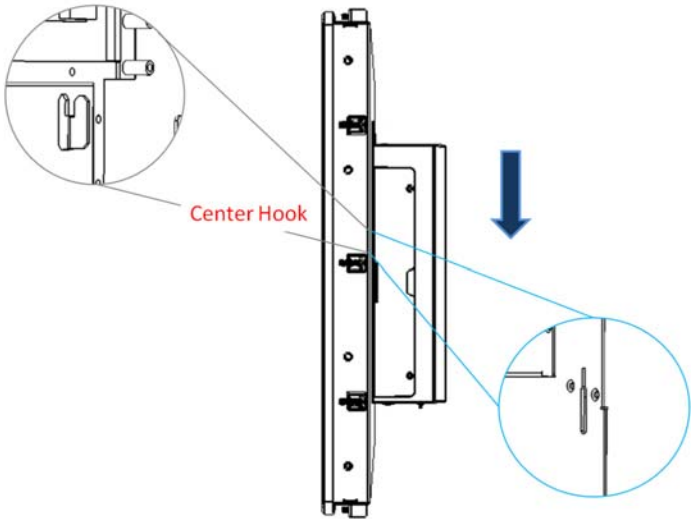
Attaching Box PC to the Display Unit

To install the Box PC onto the display unit, do the following:

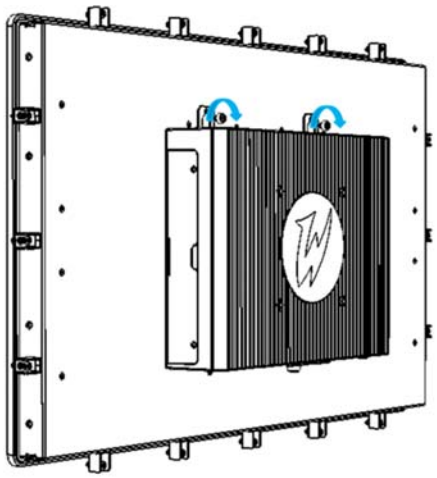
1. Position the Box PC against the mounting plate and insert the hook (located on the bottom of the display) into the hook slot on the Box PC located on the bottom of the Box PC.



2. Align it again with the other hook located in the center on the display, push the Box PC down firmly to attach the Box PC with its connector on the display unit.



3. Attach the screws to secure the Box PC to the display unit.

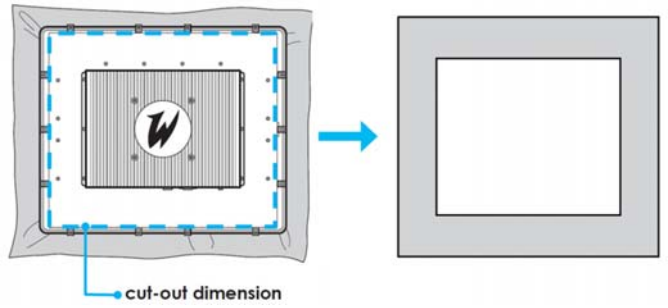


System Mounting to a Sub Frame or Panel

With the mounting clamps and screws, it provides fast and easy mounting of the in Touch Panel PC onto an instrument panel or wall panel.

To mount the device to a sub frame or panel, do the following:

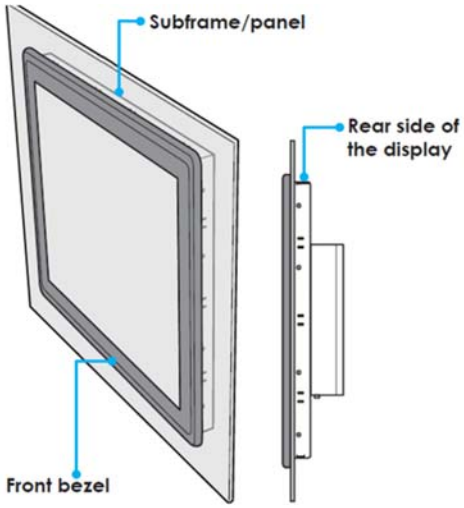
1. Prepare a customized fixture for the specific dimension of the display unit.



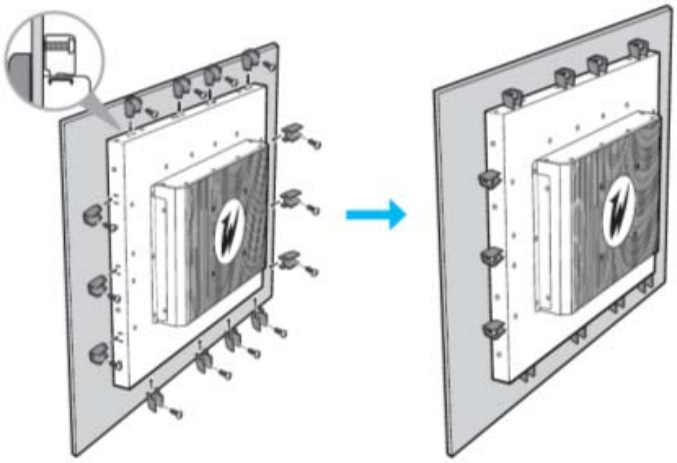
2. Turn off the device and disconnect the power source and other peripherals.
3. Cut a hole on the sub frame or panel according to the cut-out dimensions.

Cut-out dimension (W x D in mm)							
12.1”	**15”**	**15.6”**	**17”**	**18.5"**	**19”**	**21.5”**	**24”**
297 x 236	387 x 291	412.4 x 261.7	408 x 313	479.3 x 300.3	479.3 x 300.3	534 x 331	550.3 x 341.8

4. Install the device properly onto the cut-out area of the sub frame or panel.



5. Hook the mounting clamp into the corresponding mounting pair slots of the display. Then fasten the clamp with the included mounting screw to secure its position on the sub frame or panel. Repeat the same procedure for the remaining mounting clamps.

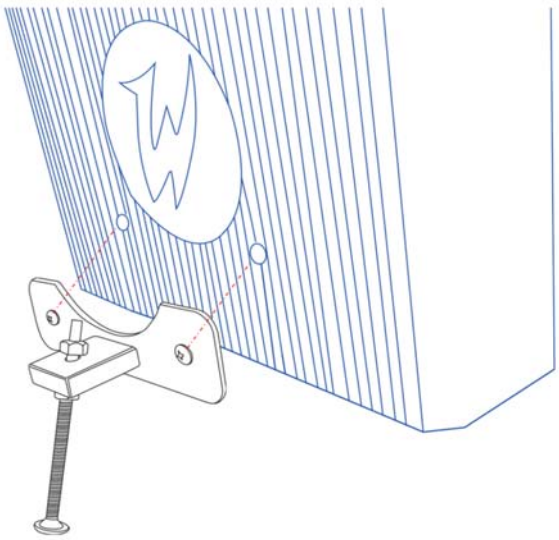


Engineering Display Stand Mounting to the Unit

With the engineering display stand mount, it provides ease of use to the unit is provided ease of use when user wants to place the unit on the surface. The stand helps to adjust the viewing angle and the height of this stand mount

To mount the unit to a display stand, do the following:

1. Prepare a stable flat surface.
2. Fix the bracket from the display stand to the VESA mount hole on the rear side of the box pc.



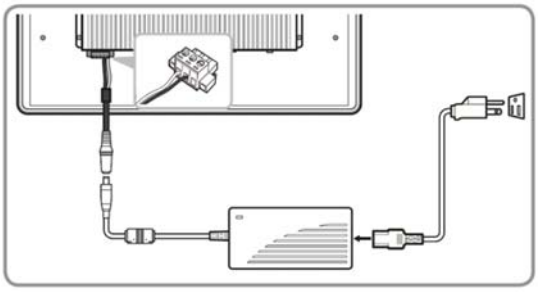
3. Insert the screw into the hole and tighten it.
4. Adjust the height and angle of the display stand mount.

Getting Started

Connecting to Power

Connecting to AC Power Source

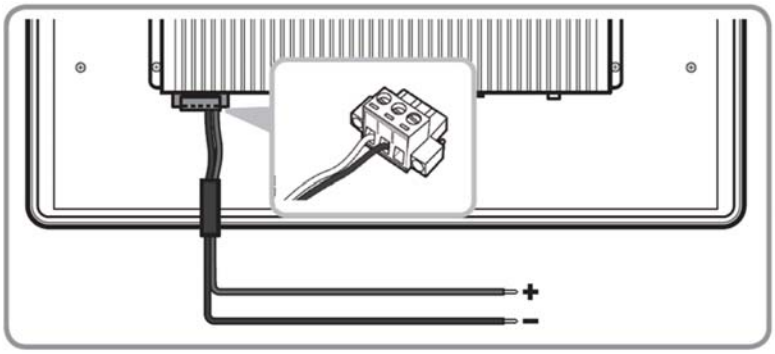
1. Plug one end of the terminal block cable firmly to the DC IN Jack.



2. Plug the other end of the terminal block plug to the AC adapter.
3. Connect the AC adapter to the power cord.
4. Plug the power cord to an electrical outlet.

Connecting to DC Power Source

1. Insert the exposed wires of the DC Power Cable to the appropriate connectors on the terminal block plug.

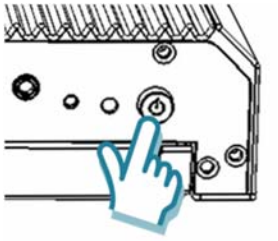


2. Plug the terminal block plug firmly to the DC IN Jack.
3. Connect the other end of the DC power cable (wires with lug terminals that are labeled **+** and **–** to the terminals of the 24V DC Power Source. Ensure that the power connections maintain the proper polarity.

Turning On Your Device

The unit is configured to power on when the power is applied to the device.

Press the **Power on** button to restart the machine when the unit has been shut down.

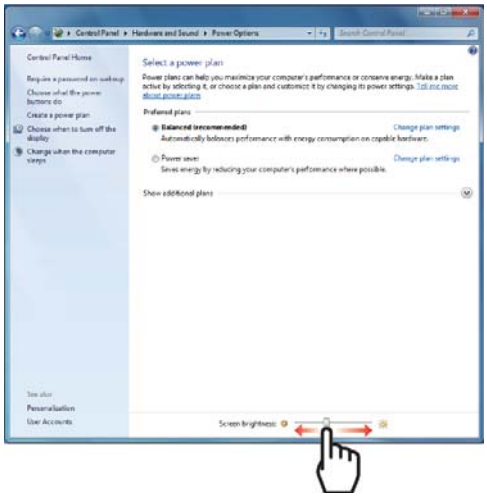


NOTE

- If the system hangs, press the **Reset** button (beside the power button) to restart the device.

Adjusting the LCD Display Brightness

1. Tap **Start** > **Control Panel** > **Hardware and Sound** > **Power Options.**
2. Drag the brightness bar to adjust the brightness level according to your preference

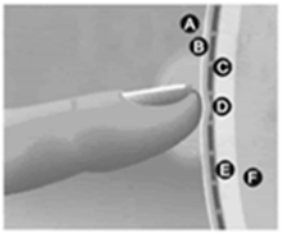


Calibrating Touch Screen

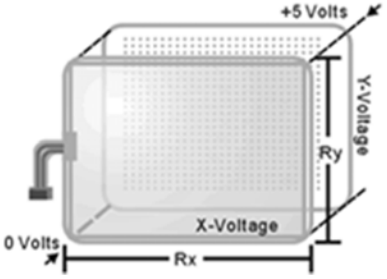
When turning on the Panel PC for the first time, it is highly recommended to calibrate the touch screen to ensure touch accuracy.

Five-Wire Resistive Touch Screens

The five-wire resistive touch screens use a glass panel with a uniform resistive coating. A thick polyester coversheet is tightly suspended over the top of the glass, separated by small transparent insulating dots. The coversheet has a hard, durable coating on the outer layer and a conductive coating on the inner layer.



A Durable hard coat
B Cover sheet
C Separator dot
D Resistive coating
E Glass panel
F CRT



When the screen is touched, the conductive coating makes electrical contact with the coating on the glass. The voltages produced are the analog representation of the position touched. The controller digitizes these voltages and transmits them to the computer for processing. The five-wire technology utilizes the bottom substrate for both X and Y axis measurements. The flexible coversheet acts only as a voltage measuring probe. This means the touch screen will continue working properly even with non-uniformity in the cover sheet's conductive coating. The result is an accurate, durable and reliable touch screen that offers drift free operation. The touch screens are sealed against contamination and moisture. The coversheet is sealed to the glass substrate with an industrial grade caulk. This prevents wicking of fluid between the coversheet and glass. Also, the touch screens are not air vented, thereby preventing fluid ingress through an air vent.

Brief Specification

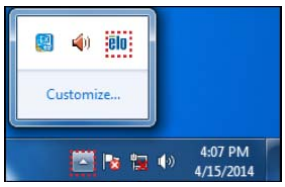
Subject	Details
Input Method	Finger, gloved hand, or stylus activation
Positional Accuracy	Standard deviation error is less than 0.080 (2 mm)
Resolution	Touch Point density is based on controller resolution of 4096 x 4096
Touch Activation force	Typically less than 4 ounces (113 grams)
Light Transmission	HL products: 80% +/- 5% at 550 nm wavelength Enhanced products: 60% +/- 5% at 550 nm wavelength

Update touch-screen driver or new information. Go To www.elotouch.com

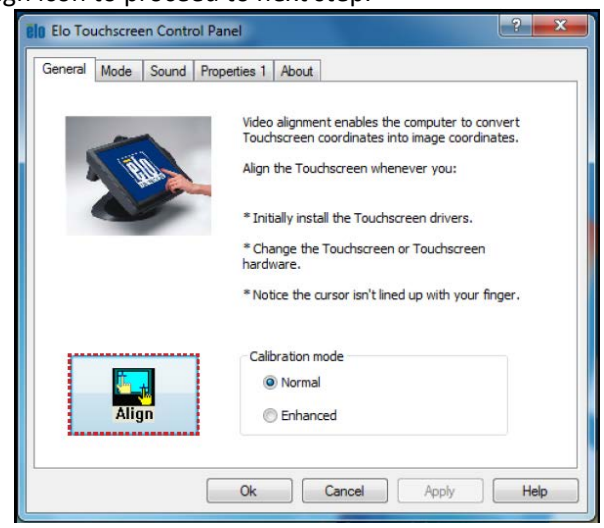
ELO Touch Correction

ELO Touch driver software provides a consistent software interface among all ELO touch screens and controllers.
Go to http://www.elotouch.com/support/dnid.asp for a complete list of available supports.
After the driver installation is complete do the following to perform touch screen calibration:

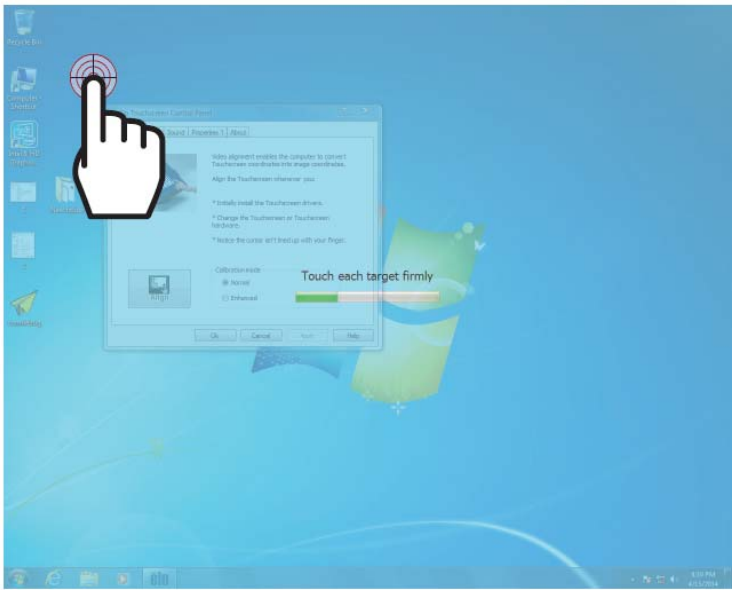
1. Tap the arrow on the system tray to display the hidden icons.
2. Double-tap the ELO icon to display the ELO touch screen menu.



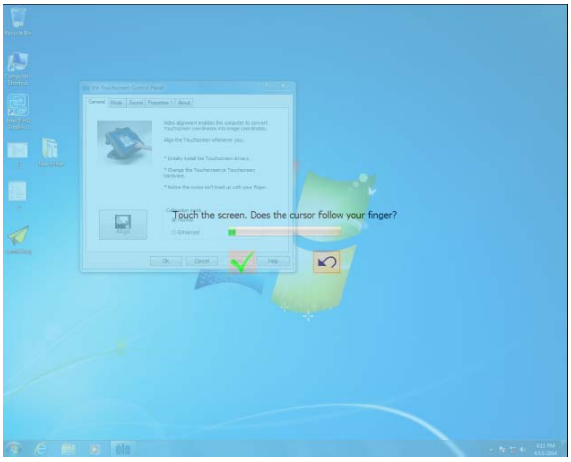
3. Double-tap the Align icon to proceed to next step.



4. Follow the on-screen instruction to calibrate the touch screen.



5. Tap the icon if the cursor follows your finger to finish and exit the calibration utility.



Projected Capacitive Touch screens

Projected Capacitive Technology enables touch to be sensed through a protective layer in front of a display, allows the complete system to have unsurpassed ressistance to impacts, scratches and vandalism. It is also unaffected by moisture, heat, rain and other fluids making it ideal for outdoor applications.

Brief Specification

Subject	Details
Input Method	Finger or gloved hand activation
Positional Accuracy	<1.5% of reported position in recommended viewing area
Resolution	4096 x 4096
Touch Activation force	No minimum touch activation force is required
Light Transmission	Up to 88% per ASTM D1003-92

For more about ELO touch solutions new information. Go To www.elotouch.com

Turning Off Your Device

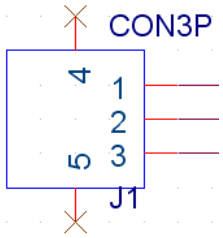
To shut down your device, do the following:

1. Tap **Start** > **Shut down.**
2. Wait for your Panel PC completely turn off before disconnecting the power cord (if necessary).

Connectors and Pin Assignment

Power

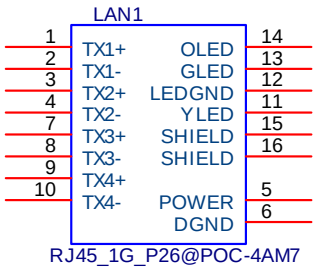
The device offers 24 VDC power input with the terminal block. Grounding help limit the effects of noise due to electromagnetic interference (EMI).



Pin	Signal Name
1	DC_IN
2	GND
3	NA
4	NC
5	NC

Ethernet

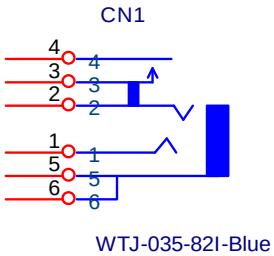
The device comes with Ethernet controller which is a single port, compact, low power component that supports GbE designs. This controller offers a fully-integrated GbE Media Access Control (MAC), Physical Layer (PHY) port and supports PCI Express.



Pin	Signal Name	Pin	Signal Name
1	MDI0_IN+	9	MDI3_IN+
2	MDI0_IN-	10	MDI3_IN-
3	MDI1_IN+	11	LAN_VDD
4	MDI1_IN-	12	LAN1_TRAFFICLED#
5	LAN1_DAC	13	LAN1_SPD1000LED#
6	LAN1_DGND	14	LAN1_100_10_G#
7	MDI2_IN+	15	GND
8	MDI2_IN-	16	GND

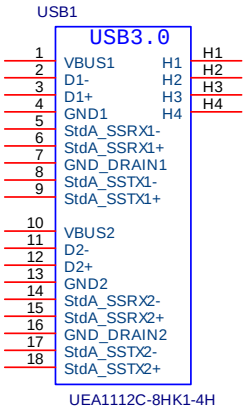
Serial Device

Use a serial cable to plug user serial device into the embedded computer's serial port. Serial ports have male DB9 connectors and can be configured for RS-232, RS-422, or RS-485. The pin assignments are shown in the following table:



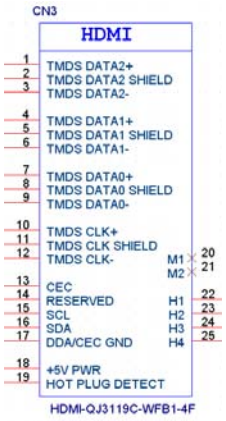
Pin	Signal Name	Pin	Signal Name
1	DCD_A	6	DSR_A
2	RXD_A	7	RTS_A
3	TXD_A	8	CTS_A
4	DTR_A	9	RI_A
5	GND_ISO_A	NA	

USB



Pin	Signal Name	Pin	Signal Name
1	USB3VCC3	12	USBD+
2	USBC-	13	GND
3	USBC+	14	USB3_P4_RX_DN_C
4	GND	15	USB3_P4_RX_DP_C
5	USB3_P3_RX_DN_C	16	GND
6	USB3_P3_RX_DP_C	17	USB3_P4_TX_DN_C
7	GND	18	USB3_P4_TX_DP_C
8	USB3_P3_TX_DN_C	H1	GND
9	USB3_P3_TX_DP_C	H2	GND
10	USB3VCC4	H3	GND
11	USBD-	H4	GND

HDMI

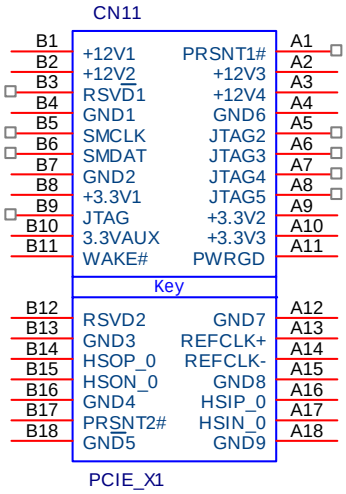


Pin	Signal Name	Pin	Signal Name
1	HDMIB_TMDS0+	11	GND
2	GND	12	HDMIB_CLK-
3	HDMIB_TMDS0-	13	GND
4	HDMIB_TMDS1+	14	NC
5	GND	15	HDMI_DDC_CLK
6	HDMIB_TMDS1-	16	HDMI_DDC_DATA
7	HDMIB_TMDS2+	17	GND
8	GND	18	+V5S
9	HDMIB_TMDS2-	19	HDMI_HPD1
10	HDMIB_CLK+		

VGA

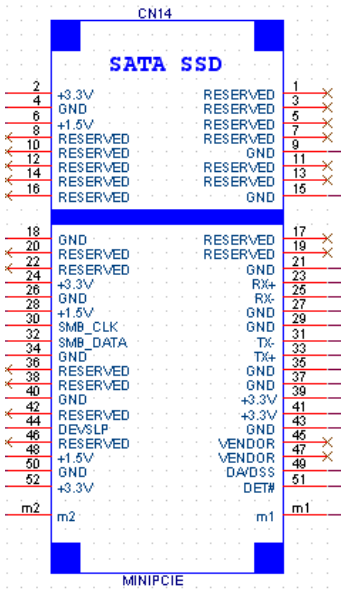
Pin	Signal Name
V1	R_FILTER
V2	G_FILTER
V3	B_FILTER
V4	NA
V5	GND
V6	GND
V7	GND
V8	GND
V9	VGA_5V
V10	GND
V11	NA
V12	VGA_SDA
V13	VGA_HSYNC_R
V14	VGA_VSYNC_R
V15	VGA_SCL

SATA



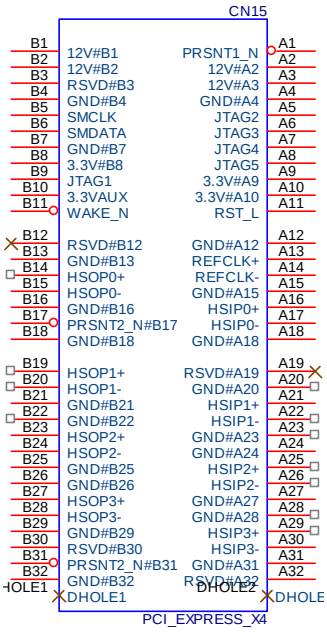
Pin	Signal Name	Pin	Signal Name
A1	NC	B1	+V12S
A2	+V12S	B2	+V12S
A3	+V12S	B3	NC
A4	GND	B4	GND
A5	NC	B5	NC
A6	NC	B6	NC
A7	NC	B7	GND
A8	NC	B8	+V5S
A9	+V5S	B9	NC
A10	+V5S	B10	+V5S
A11	GND	B11	GND
A12	SATA2_DET#	B12	SATA1_DET#
A13	SATA_TXP1	B13	SATA_TXP0
A14	SATA_TXN1	B14	SATA_TXN0
A15	GND	B15	GND
A16	SATA_RXN1	B16	SATA_RXN0
A17	SATA_RXP1	B17	SATA_RXP0
A18	GND	B18	GND

Mini-PCIE Slot for mSATA



Pin	Signal Name	Pin	Signal Name
1	NC	27	GND
2	+V3.3DX_SSD	28	+V1.5S_SSD
3	NC	29	GND
4	GND	30	SMB_CLK
5	NC	31	SATA_TXN2
6	+V1.5S_SSD	32	SMB_DATA
7	NC	33	SATA_TXP2
8	NC	34	GND
9	GND	35	GND
10	NC	36	NC
11	NC	37	GND
12	NC	38	NC
13	NC	39	+V3.3DX_SSD
14	NC	40	GND
15	GND	41	+V3.3DX_SSD
16	NC	42	NC
17	NC	43	GND
18	GND	44	SATA2_DEVSLP
19	NC	45	NC
20	NC	46	NC
21	GND	47	NC
22	NC	48	+V1.5S_SSD
23	SATA_RXP2	49	SSD_LED#
24	+V3.3DX_SSD	50	GND
25	SATA_RXN2	51	+V3.3DX_SSD
26	GND	52	+V3.3DX_SSD

eDP Board Connector



Pin	Signal Name	Pin	Signal Name
A1	DC_IN	B1	DC_IN
A2	DC_IN	B2	DC_IN
A3	DC_IN	B3	DC_IN
A4	DC_IN	B4	DC_IN
A5	DC_IN	B5	DC_IN
A6	DC_IN	B6	DC_IN
A7	DC_IN	B7	DC_IN
A8	+V5S	B8	+V12S
A9	+V5S	B9	+V12S
A10	+V5S	B10	+V12S
A11	+V5S	B11	+V12S
A12	+V3.3S	B12	NC
A13	+V3.3S	B13	BRIGHT
A14	+V3.3S	B14	NC
A15	+V3.3S	B15	GND
A16	GND	B16	USB_PN7
A17	GND	B17	USB_PP7
A18	GND	B18	GND
A19	NC	B19	NC
A20	NC	B20	NC
A21	GND	B21	GND
A22	NC	B22	NC
A23	NC	B23	DP_HPD
A24	GND	B24	GND
A25	NC	B25	AUX_CH_N
A26	NC	B26	AUX_CH_P
A27	GND	B27	GND
A28	NC	B28	LANE0_P
A29	NC	B29	LANE0_N
A30	GND	B30	GND
A31	SMB_DATA	B31	LANE1_P
A32	SMB_CLK	B32	LANE1_N

Configuration of the BIOS

BIOS Setup and Boot Procedure

BIOS stands for “Basic Input Output System” and it is the most basic communication between user and the hardware. To enter BIOS Setup, the [DEL] key must be pressed after the USB controller has been initialized and as soon as the following message appears on the monitor during Power-On Self-Test (POST):

“Press DEL to run SETUP”

Note : Update BIOS version may be published after the manual is released. Please check with the latest version of BIOS on the website. User may need to run BIOS setup utility for the following status:

1. Error message on screen indicate to check BIOS Setup.
2. Restoring the factory default setting.
3. Modifing the specific hardware specification.
4. Want to optimize the specification.

BIOS Setup Keys

The following keys are enabled during POST:

Key	Function
Del	Enters the BIOS setup menu.
F7	Display the boot menu. Lists all bootable devices that are connected to the system. With cursor ↑ and cursor ↓ and by pressing <ENTER>, select the device used for the boot.
Pause	Pressing the [Pause] key stops the POST. Press any other key to resume the POST.

The following keys can be used after entering the BIOS Setup:

Key	Function
F1	General Help
F2	Previous Values
F3	Optimized Defaults
F4	Save & Exit
Esc	Exit
+/-	Change Opt.
Enter	Select or execute command
Cursor ↑	Moves to the previous item

Cursor ↓	Goes to the next item
Cursor ←	Moves to the previous item
Cursor →	Goes to the next item

Main

Immediately after the [DEL] key is pressed during startup, the main BIOS setup menu appears:

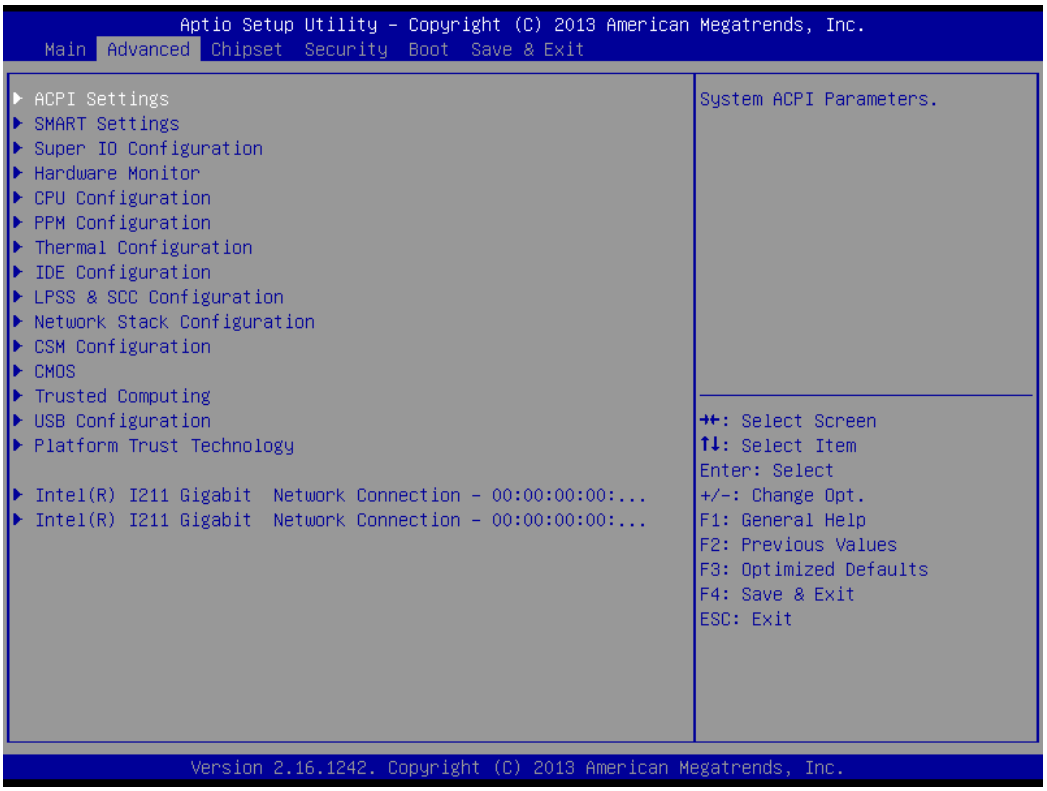
BIOS setting	Description	Setting options	Effect
System Time	This is current time setting. The time is maintained by the battery when the device is turned off.	Adjustment of the time	Set the time in the format [hh:mm:ss]

System Date	This is current date setting. The time is maintained by the battery when the device is turned off.	Changes to the date	Set the date in the format [mm/dd/yyyy]
System Language	This is current language setting.	Adjustment of the language	Set the language in other language. The language in this device is English.

BIOS Advanced Setup Utility

BIOS Setting	Description
Intel AMT Support	Enable and disable BIOS support for Intel Active Management Technology.
Intel AMT Setup Prompt	Enable and disable the boot interruption <Ctrl+P> to call up Intel Management Engine BIOS Extention (MBEx) configuration page.
AMT CIRA Request Trig	Enable Client Initiated Remote Access (CIRA) Fast Call for Help. CIRA allows AMT maintenance event if the AMT PC is not in the intranet.
AMT CIRA Timeout	CIRA timeout for connection establishment with MPS (Manageability Presence Server / “vPro Enabled Gateway”).
Un-Configure ME	Resets all the values of the MEBx to their defaults (see section “Reset with Un-Configure”).
USB Configure	USB Configure: Enable and disable the USB configuration (provisioning).

Advanced



BIOS Setting	Description	Setting options	Effect
ACPI Settings	Configures ACPI settings	Enter	Opens submenu
SMART Settings	Configures SMART settings	Enter	Opens submenu
Super IO Configuration	Configures System Super IO Chip parameters	Enter	Opens submenu
Hardware Monitor	Monitor hardware status	Enter	Opens submenu
CPU Configuration	Configures CPU settings	Enter	Opens submenu
PPM Configuration	Configures PPM Parameters	Enter	Opens submenu
Thermal Configuration	Configures Thermal Parameters	Enter	Opens submenu
IDE Configuration	Configures IDE devices	Enter	Opens submenu
LPSS & SCC Configuration	Configures LPSS & SCC	Enter	Opens submenu
Network Stack Configuration	Configures network stack	Enter	Opens submenu
CSM Configuration	Configures CSM: Enable/Disable, Option ROM execution settings, etc.	Enter	Opens submenu
CMOS	CMOS settings / Information	Enter	Opens submenu
Trusting Computing	Trusted computing settings	Enter	Opens submenu
USB Configuration	Configures USB settings	Enter	Opens submenu
Platform Trust Technology	Platform trust technology	Enter	Opens submenu

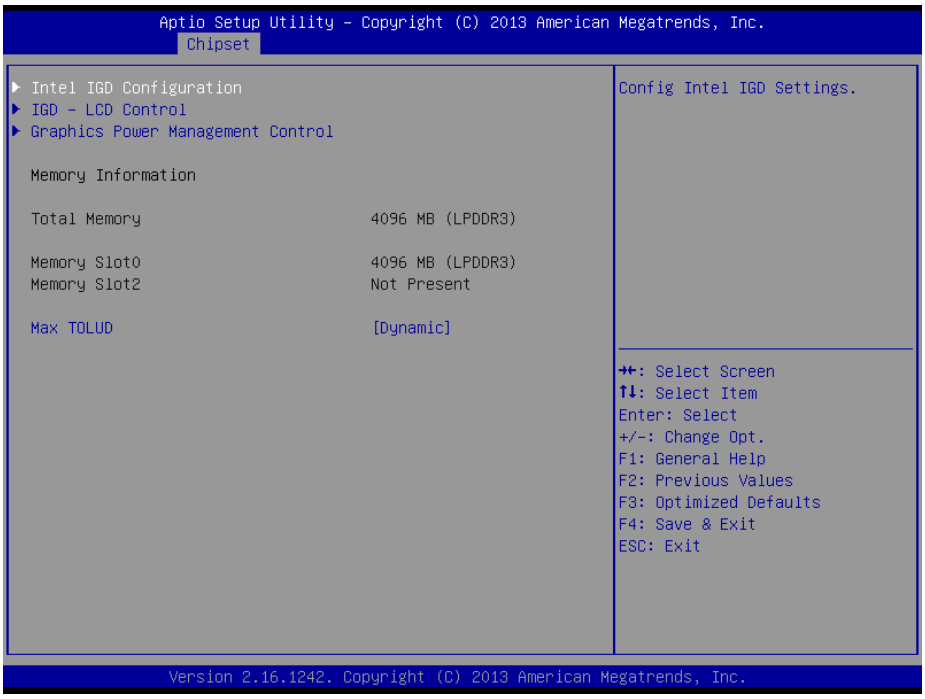
USB Configuration

BIOS Setting	Description	Setting options	Effect
Legacy USB Support	User can enable or disable USB port.	Disable	Will keep USB devices available only for EFI applications.
		Enable	Enable all the USB devices
USB 3.0 Support	User can enable or disable USB 3.0 (XHCI) controller support.	Enable	USB 3.0 is enable
		Disable	USB 3.0 is disable
XHCI Hand-off	This is a workaround for OSs without XHCI hand-off support.	Disable	Disables this function
		Enable	Enables this function
EHCI Hand-off	This is a workaround for OSs without ECHI hand-off support.	Disable	Disables this function
		Enable	Enables this function
USB mass storage driver support	User can Enable or disable USB mass storage driver support.	Disable	Disables this function
		Enable	Enables this function
USB Transfer time-out	The time-out value for control, bulk, and interrupt transfers.	1 Sec 5 Sec 10 Sec 20 Sec	Depends on the time-out value

Device Reset time-out	USB mass storage device start unit command time-out.	10 Sec 20 Sec 30 Sec 40 Sec	Depends on the time-out value
Device power-up delay	Maximum time the device will take before it properly reports itself to the host controller.	Auto	Uses default value: for a root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor

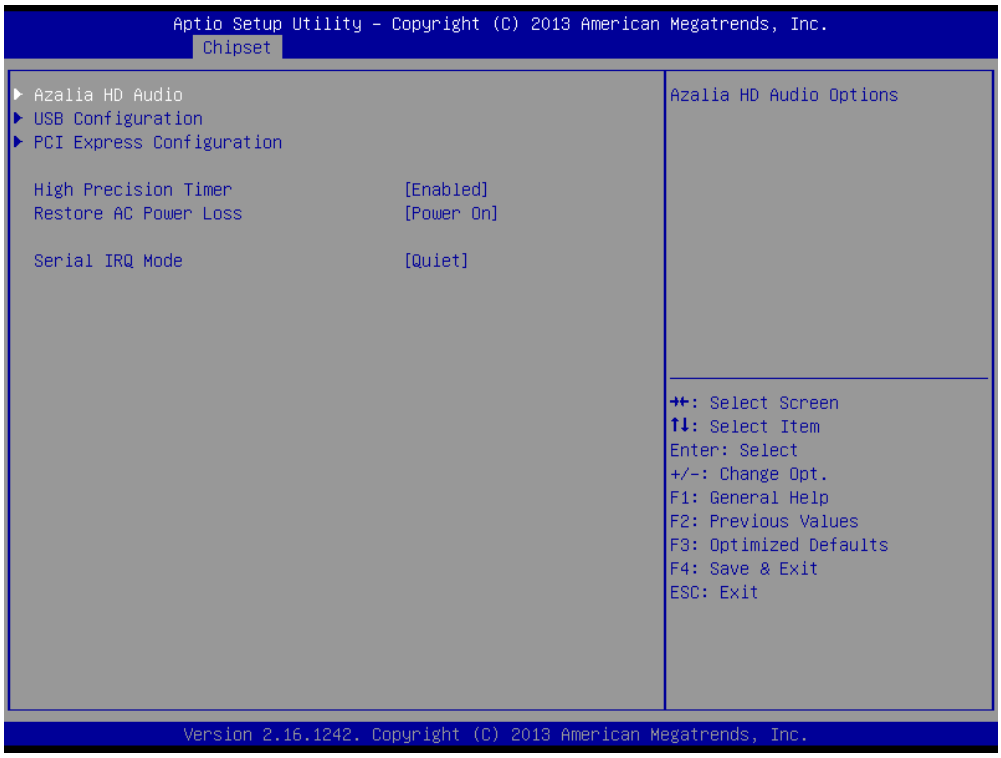
Chipset

Chipset – North Bridge Parameters



BIOS Setting	Description	Setting options	Effect
Intel IGD Configuration	Provides onboard graphics-related configuration options.	Enter	Opens submenu
IGD – LCD Control	Configures IGD – LCD setting	Enter	Opens submenu
Graphic Power Management Control	Provides power saving configuration options for the onboard graphics.	Enter	Opens submenu

Chipset – South Bridge Parameters

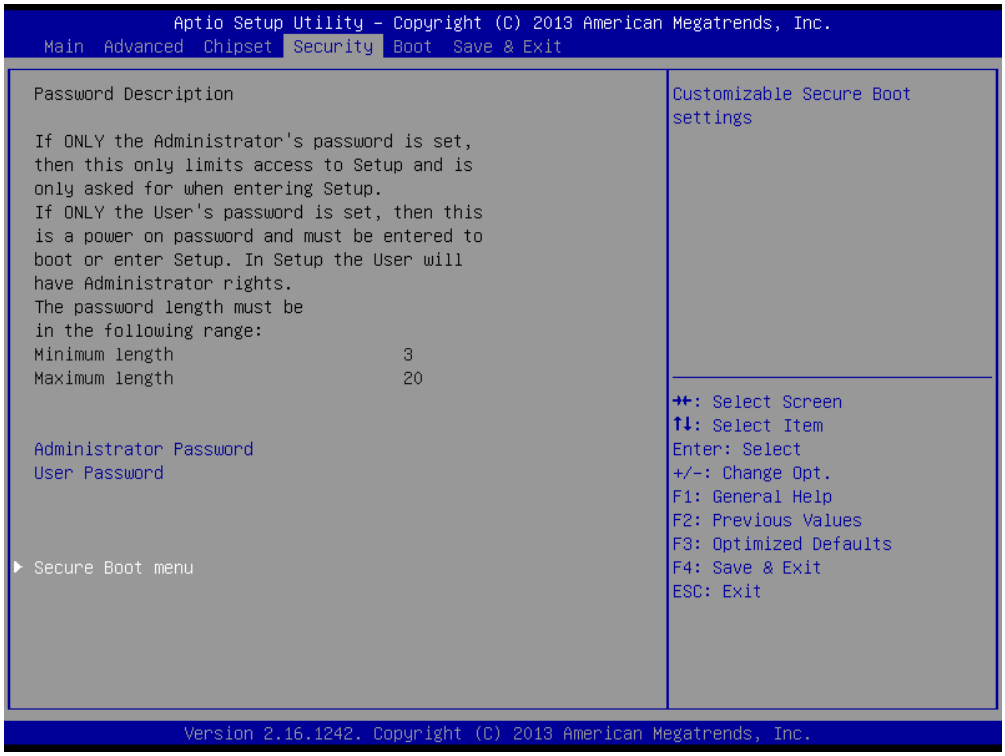


BIOS Setting	Description	Setting options	Effect
Azalia HD Audio	Configures onboard audio function.	Disable	Disables this function
		Enable	Enables this function
USB Configuration	Provides user with configuration options for the USB controller, such as enabling/disabling a specific USB port and support for certain features.	USB 2.0(EHCI)	Enable / Disable this function
		USB Port 0	Enable / Disable this function
		USB Port 1	Enable / Disable this function
		USB Port 2	Enable / Disable this function
		USB Port 3	Enable / Disable this function
PCI Express Configuration	Provides user with configuration options for the PCI Express bus, such as enabling/disabling a specific PCI Express channel and speed configuration.	PCI Express port 0	Enable / Disable this function
		PCI Express port 1	Enable / Disable this function
		PCI Express port 2	Enable / Disable this function

		PCI Express port 3	Enable / Disable this function
High Precision Timer	Configures high precision timer (HPET) in the operating system.	Disable	Disables this function
		Enable	Enables this function
Restore AC Power Loss	Configures the state of the system after return of power on AC power loss.	Power Off	The System stays off upon the return of the AC power
		Power On	The System is turned on upon the return of the AC power
		Last State	The system returns to its last known awake state upon the return of the AC power
Serial IRQ Mode	Configures IRQ mode.	Quite	Entering quite (active) mode
		Continuous	Entering Continuous (idle) mode

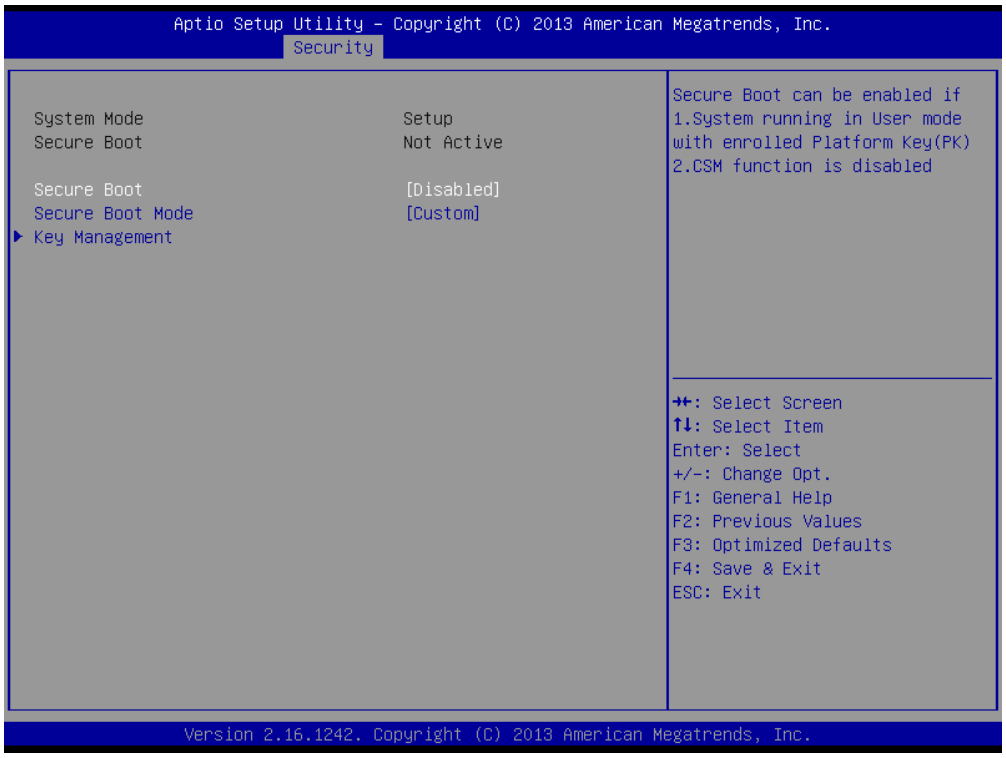
Security

Allows user to configure an administration or user password, user must enter the administrator or user password at system startup and when entering BIOS setup.



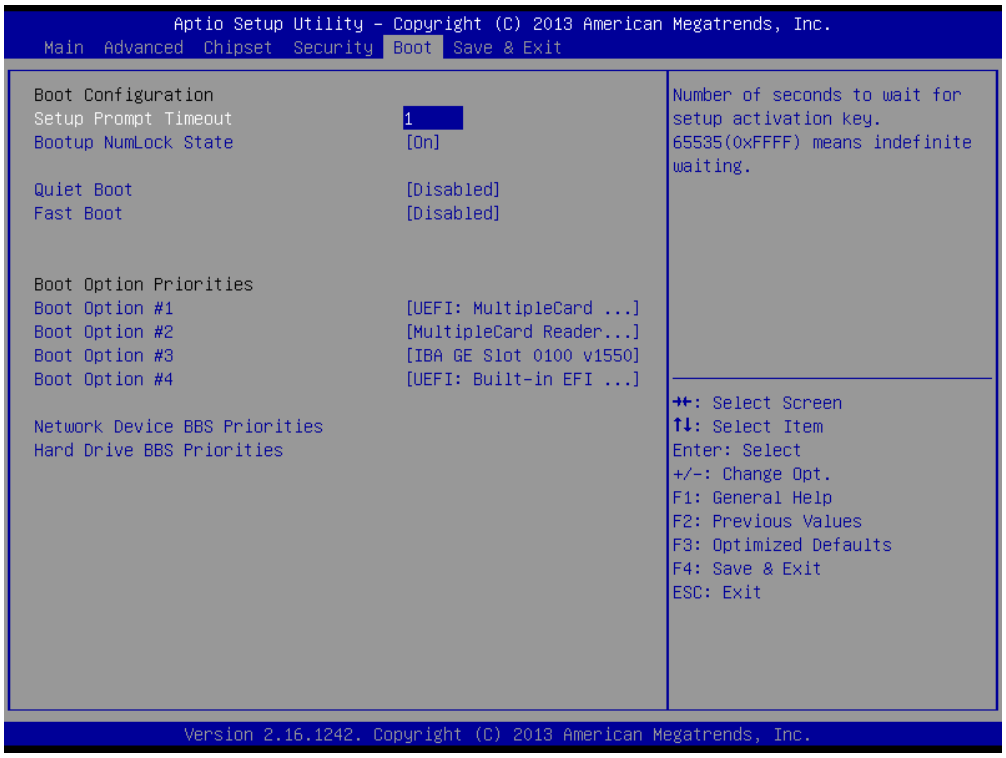
BIOS Setting	Description	Setting options	Effect
Administrator Password	Displays whether or not an administrator password has been set.	Enter	Enter Password
User Password	Display whether or not a user password has been set.	Enter	Enter Password

Security – Secure Boot Menu



BIOS Setting	Description	Setting options	Effect
Secure Boot	Displays the current boot state.	Disable	Disables this function
		Enable	Enables this function
Secure Boot Mode	Allows user to configure the secure boot mode.	Disable	Disables this function
		Enable	Enables this function
Key Management	Provides user with configuration options for secure boot key management.	Enroll all factory default keys, Platform key, key exchange key, Authorized signatures, Authorized timestamps, Forbidden signatures	Select the desired key

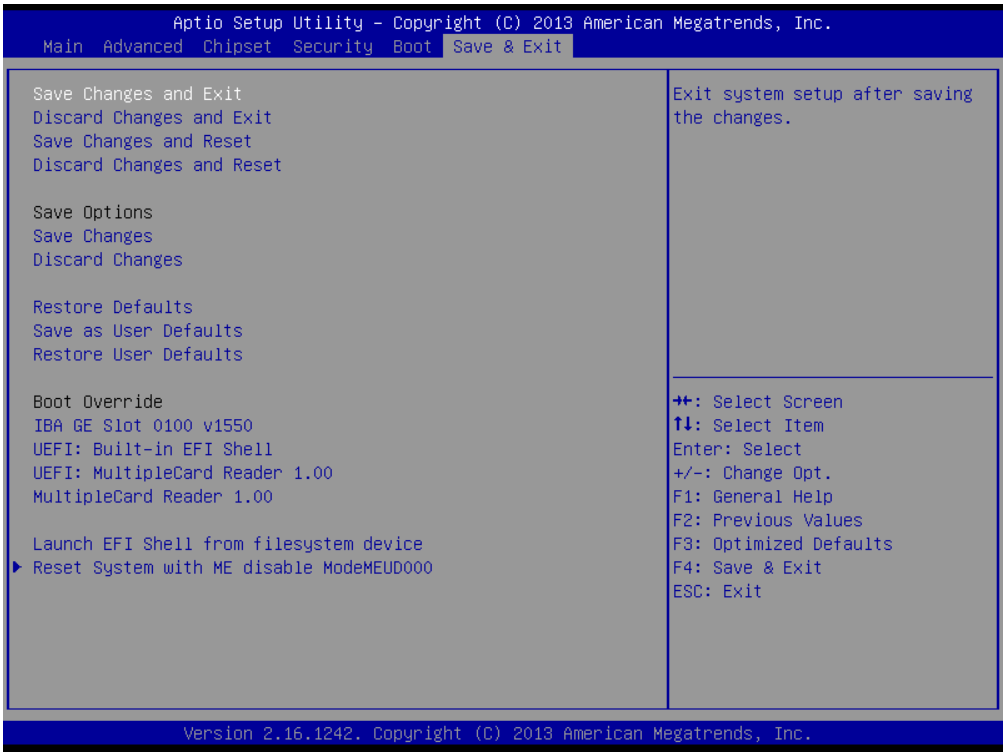
Boot



BIOS Setting	Description	Setting options	Effect
Setup Prompt Timeout	Allows user to configure the number of seconds to stay in BIOS setup prompt screen.	Enter	Set the prompt timeout
Boot NumLock State	Enables or disables NumLock feature on the numeric keypad of the keyboard after the POST (Default: On).	On	Remains On
		Off	Remains Off
Quite Boot	Determines if POST message or OEM logo (default = Black background) is displayed.	Disabled	Disables this function
		Enabled	Enables this function
Fast Boot	Enables or disables Fast Boot to shorten the OS boot process. (Default: Disabled).	Disable	Disables this function
		Enable	Enables this function
Boot Option Priority	Specifies the overall boot order from the available devices.	Ex: Boot Option#1 (hard drive)	Hard drive as the first priority
Hard Drive BBS Priority	Specifies the boot order for a specific device type, such as	Enter	Enter the submenu that

	hard drives, optical drives, floppy disk drives, and devices that support Boot from LAN function.		present the devices of the same type are connected.

Save & Exit



BIOS Setting	Description	Setting options	Effect
Save Changes and Exit	This saves the changes to the CMOS and exits the BIOS Setup program.	Enter <Yes>	Saves the changes
		Esc <No>	Return to the BIOS Setup Main Menu
Discard Changes and Exit	This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS.	Enter <Yes>	Saves the changes
		Esc <No>	Return to the BIOS Setup Main Menu
Save Changes and Reset	Reset the system after saving the changes.	Enter <Yes>	Saves the changes

		Esc <No>	Return to the BIOS Setup Main Menu
Discard Changes and Reset	Reset system setup without saving any changes.	Enter <Yes>	Saves the changes
		Esc <No>	Return to the BIOS Setup Main Menu
Save Changes	Save changes done so far to any of the setup options.	Enter <Yes>	Saves the changes
		Esc <No>	Return to the BIOS Setup Main Menu
Discard Changes	Discard changes done so far to any of the setup options.	Enter <Yes>	Saves the changes
		Esc <No>	Return to the BIOS Setup Main Menu
Restore Default	Restore/load default values for all the setup options.	Enter <Yes>	Saves the changes
		Esc <No>	Return to the BIOS Setup Main Menu
Save as User Defaults	Save the changes done so far as User defaults.	Enter <Yes>	Saves the changes
		Esc <No>	Return to the BIOS Setup Main Menu
Restore User Defaults	Restore the User Defaults to all the setup options.	Enter <Yes>	Saves the changes
		Esc <No>	Return to the BIOS Setup Main Menu

Hardware Modification

Installing the Hard Disk in the Hard Drive Bay

This Device supports one 180 GB solid state drive, no tools are required to upgrade or replace this hard disk. To replace/upgrade, do the following to perform this task:

1. Disconnect the device from the power source.
2. Loosen the Non-losable thumb screw as illustrated below.

3. Open the cover door and user will see one bay with the hard disk inside.

4. Carefully pull it out.

5. Exchange with the new hard disk. Be sure to check the orientation of the hard disk is correct.

6. When finished, insert the bracket back and carefully tighten the non-losable thumb screw.

Service Access

To access the RAM, Internal SSD, Fuse, and PCI Card Slot do the following to perform this task:

1. Turn the box pc over, back facing up.

2. Locate the side access door, located on the side and then remove the two screws on the side of the box pc.

3. Locate the bottom access door and then remove the screws.

4. User will be able to access the RAM, Internal SSD, Fuse, and PCI Card Slot as follows.

Fuse Replacement

Fuse Specification	
Manufacturer	Littlefuse, Inc.
Part#	0218010.MXBP
Type/Style	218
Voltage rating	250 VAC, 30 VDC
Amp rating	10A
Mounting type	Holder
Fuse type	Cartridge, Glass
Size/Dimension	0.205" Dia x 0.787" L

Replacement Instruction

1. Power off the HMI and disconnect the power from the power source.
2. Remove the fuse cartridge from the socket.
3. Insert a new fuse cartridge.

Maintenance

Regular Cleaning and Maintenance

Before Cleaning:

- Make sure the device is turned off.
- Disconnect the power cable from any AC outlet.

When Cleaning:

- Never spray or pour any liquid directly on the screen or case.
- Wipe the screen with a clean, soft, lint-free cloth. This remove dust and other particles.
- The display area is highly susceptible to scratching. Do not use Ketone type material (ex. Acetone), Ethyl alcohol, toluene, ethyl acid or methyl chloride to clear the panel. It may permanently damage the panel and void the warranty.
- If it is still not clean enough, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth and wipe the screen.
- **Do Not** use water or oil directly on the display screen. If droplets are allowed to drop on the screen, permanent staining or discoloration may occur.

Using Recovery Wizard to Restore Panel PC

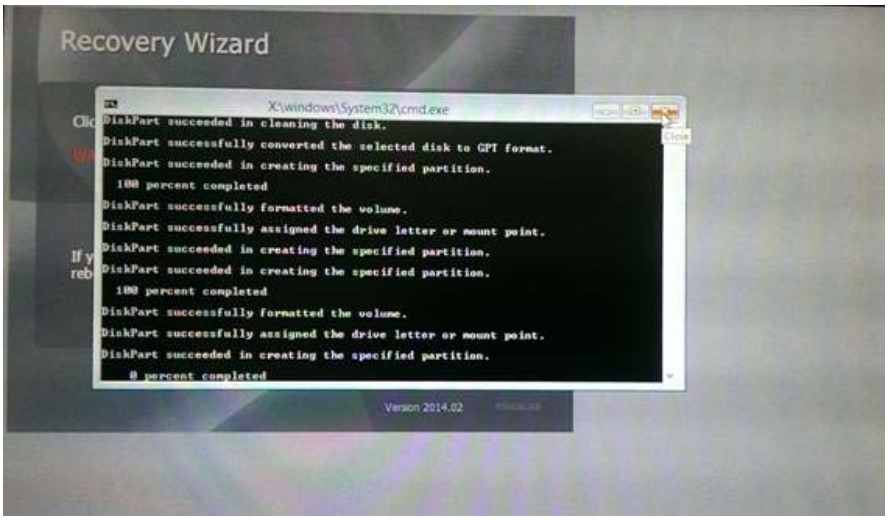
Our system has a dedicated recovery partition stored on the hard drive of the PC to enable quick one-key recovery process. This partition occupies about 11GB of the storage space, and comes built-in to each Panel PC and Box PC.

Warning: Before starting the recovery process, be sure to backup all user data, as all data will be lost after the recovery process.

To enable quick one-key recovery procedure:

- Plug-in the AC adapter to Panel PC. Make sure the Panel PC stays plugged in to power source during the recovery process.
- Turn on the Panel PC and when the boot screen shows up, press the F6 to initiate the Recovery Wizard.
- The following screen shows the Recovery Wizard. Click on “Recovery” button to continue.

- A warning message about data loss will show up. Make sure data is backed up before recovery and click on “Yes” to continue.
- Wait till the recovery process to complete. During the recovery process, a command prompt will show up to indicate the percent of recovery process. After recovery is completed the panel computer will restart automatically.



AIS Support

We offer multiple support programs for installation, configuration, and troubleshooting. For more information please contact Support Center at support@aispro.com or (888) 485-6688.

New Product Satisfaction Return

AIS tests all of its products to help ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned for repair, you can submit request at http://www.aispro.com/support/rma-request

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http://www.aispro.com/contactus